Access DB# 122345

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Dawn Garrett Examiner #: 76107 Date: 5/18/2004
Art Unit: 1774 Phone Number 272-1523 Serial Number: 10/622,504
Mail Box and Bldg/Room Location: Remsen 5C75 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Material for an Electroluminescent Element and Electroluminescence Element Using the Same
Inventors (please provide full names): SATOSHI SEO, HIROKO YAMAZAKI
Earliest Priority Filing Date: 7/31/2002 Japan 2002-222451

For Sequence Searches Only *Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search compounds [1] to [11] in combination with the described polymer of cl. 1-11 as a material (composition).

Please show results of ~~structures without~~ material without a utility

also show results combined with utility as part of an electroluminescence element.

Thank you.

****

STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher: K. Fuller	NA Sequence (#)		STN ✓	
Searcher Phone #:	AA Sequence (#)		Dialog	
Searcher Location:	Structure (#)	12	Questel/Orbit	
Date Searcher Picked Up:	Bibliographic		Dr.Link	
Date Completed: 5/21/04	Litigation		Lexis/Nexis	
Searcher Prep & Review Time: 35	Fulltext		Sequence Systems	
Clerical Prep Time:	Patent Family		WWW/Internet	
Online Time: 150	Other		Other (specify)	

PTO-1590 (8-01)

4:35 PM

=> FILE REGISTRY
FILE 'REGISTRY' ENTERED AT 15:31:23 ON 21 MAY 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 20 MAY 2004 HIGHEST RN 684211-73-2
DICTIONARY FILE UPDATES: 20 MAY 2004 HIGHEST RN 684211-73-2

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> FILE HCAPLUS
FILE 'HCAPLUS' ENTERED AT 15:31:28 ON 21 MAY 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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FILE COVERS 1907 - 21 May 2004 VOL 140 ISS 22
FILE LAST UPDATED: 20 May 2004 (20040520/ED)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> D QUE
L4 64659 SEA FILE=REGISTRY ABB=ON 46.150.9/RID
L5 4093 SEA FILE=REGISTRY ABB=ON L4 AND 1/NR AND 2/O
L11 24589 SEA FILE=REGISTRY ABB=ON 591.49.52/RID
L12 5505 SEA FILE=REGISTRY ABB=ON L11 AND 2/O
L13 1892 SEA FILE=REGISTRY ABB=ON L12 AND 2/NR
L16 350 SEA FILE=REGISTRY ABB=ON L4 AND CYANO AND 1/NR
L17 259 SEA FILE=REGISTRY ABB=ON L16 AND 2-4/N
L21 81850 SEA FILE=REGISTRY ABB=ON 1839.6.36/RID
L22 5957 SEA FILE=REGISTRY ABB=ON L21 AND 3/NR AND (1/O OR 2/N)
L23 84 SEA FILE=REGISTRY ABB=ON L22 AND DICYANO

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

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L24          44 SEA FILE=REGISTRY ABB=ON  L22 AND DINITRIL?
L25         121 SEA FILE=REGISTRY ABB=ON  L23 OR L24
L27         134 SEA FILE=REGISTRY ABB=ON  L22 AND 1/O AND OXO
L28         253 SEA FILE=REGISTRY ABB=ON  L25 OR L27
L31        3910 SEA FILE=REGISTRY ABB=ON  16.145.6/RID
L32       79933 SEA FILE=REGISTRY ABB=ON  (DINITRIL? OR DICYANO?)
L33         210 SEA FILE=REGISTRY ABB=ON  L31 AND L32
L34             STR
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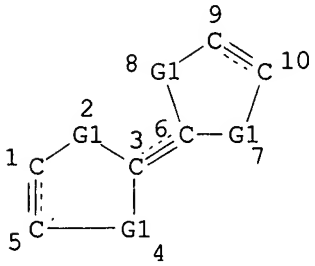


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VAR G1=S/SE/TE
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  10

STEREO ATTRIBUTES: NONE
L36             SCR 1839
L38             SCR 2022
L39             SCR 1935 AND 2019
L40             SCR 1926 AND 2019
L42             SCR 2127
L44             SCR 1842
L46             SCR 134 OR 1773
L48        3373 SEA FILE=REGISTRY SSS FUL L34 AND L36 AND (L38 OR L39 OR L40)
                AND L46 NOT (L42 OR L44)
L52         167 SEA FILE=REGISTRY ABB=ON  591.49.33/RID
L53          77 SEA FILE=REGISTRY ABB=ON  L52 AND (DICYANO? OR DINITRIL?)
L56          28 SEA FILE=REGISTRY ABB=ON  2508.17.32/RID
L57          15 SEA FILE=REGISTRY ABB=ON  L56 AND 4/N
L58          13 SEA FILE=REGISTRY ABB=ON  L57 AND (DINITRIL? OR DICYAN?)
L61             STR
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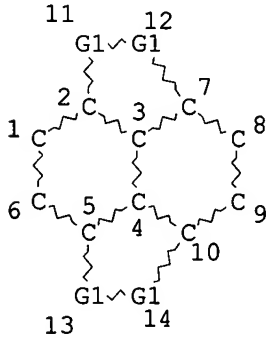

VAR G1=S/SE/TE
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

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L71	7	SEA FILE=REGISTRY ABB=ON L66 AND 2/NR AND (2/TE OR (1/TE AND (1/S OR 1/SE)))
L74	363	SEA FILE=REGISTRY ABB=ON 46.162.2/RID
L75	55	SEA FILE=REGISTRY ABB=ON L74 AND 2/NR AND (2/SE OR (1/SE AND (1/S OR 1/TE)))
L76	7	SEA FILE=REGISTRY ABB=ON C6N4/MF
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L78	10	SEA FILE=REGISTRY ABB=ON (L76 OR L77) NOT 1-20/NR
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L80	12745	SEA FILE=HCAPLUS ABB=ON L13
L81	5026	SEA FILE=HCAPLUS ABB=ON L17
L82	381	SEA FILE=HCAPLUS ABB=ON L28
L83	85	SEA FILE=HCAPLUS ABB=ON L53 OR L58
L84	3342	SEA FILE=HCAPLUS ABB=ON L78
L85	74	SEA FILE=HCAPLUS ABB=ON L33
L86	3409	SEA FILE=HCAPLUS ABB=ON L48
L87	555	SEA FILE=HCAPLUS ABB=ON L63
L88	116	SEA FILE=HCAPLUS ABB=ON L67 OR L71 OR L75
L89	43572	SEA FILE=HCAPLUS ABB=ON (L79 OR L80 OR L81 OR L82 OR L83 OR L84 OR L85 OR L86 OR L87 OR L88)
L92	21	SEA FILE=HCAPLUS ABB=ON L89 AND (RESIN# OR ?POLYMER?)(6A)?CONJUGAT?(5A)?CHAIN?

Compounds 1-11 from structure search or sing ID's or MF

=> D L92 ALL 1-21 HITSTR

L92 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:585700 HCAPLUS
DN 139:246283
ED Entered STN: 31 Jul 2003
TI π-Conjugated Polymers Exhibiting a Novel Doping Based on Redox of Side Chains
AU Nishiumi, Toyohiko; Higuchi, Masayoshi; Yamamoto, Kimihisa
CS Kanagawa Academy of Science and Technology (KAST) and Department of Chemistry, Faculty of Science and Technology, Keio University, Yokohama, 223-8522, Japan
SO Macromolecules (2003), 36(17), 6325-6332
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 72, 76
AB Polyphenylene and polythiophene derivs. that have N,N'-diphenyl-1,4-phenylenediamine (PDA) units were synthesized using the

palladium-catalyzed Suzuki coupling or cross coupling routes. Each prepared polymer has good redox activity, and the polyphenylene derivs. showed two redox couples in acetonitrile/1 M trifluoroacetic acid electrolyte, whereas the polythiophene derivs. show only one redox couple under the same conditions. The electronic conductivity of the polythiophene derivs. was dramatically enhanced (0.1 S/cm) by the one-electron oxidation of the PDA unit (0.4 V, vs. Ag/Ag+) upon injection of a radical cation into the main chain from the PDA unit. Spectroelectrochem. data showed that the radical cation of the thiophene-substituted PDA was more delocalized than that of the phenylene-substituted unit. Electrochem. anal. of the model compds. revealed that the injection of radical monocation radical carriers into the main chain is based on electron transport between the intramol. PDAs.

ST diphenylphenylenediamine polyphenylene conjugated polymer prepn Suzuki coupling polymn; polythiophene diphenylphenylenediamine prepn redox activity electronic cond; electron oxidn diphenylphenylenediamine radical cation injection **conjugated polymer chain;** conducting polymer doping radical cation redox side chain

IT Polymerization
(Suzuki coupling and cross-coupling; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)

IT Radical ions
(cations; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)

IT Polymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conjugated, polyphenyls and polythiophenes, diphenyl-phenylenediamine side-chain; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)

IT Polyphenyls
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(diphenyl-phenylenediamine side-chain; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)

IT Redox reaction
(electrochem.; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)

IT Redox potential
(of diphenyl-phenylenediamine side group; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)

IT Conducting polymers
(polythiophenes, diphenyl-phenylenediamine side-chain; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)

IT Cross-coupling reaction
Dehydration reaction
Doping
Suzuki coupling reaction
(preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)

IT Electric conductivity
(redox; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls

and polythiophenes)
IT Electrochemistry
(spectroelectrochem., UV-visible; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
IT Electric current carriers
(transport; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
IT 14221-01-3, Tetrakis(triphenylphosphine) palladium
RL: CAT (Catalyst use); USES (Uses)
(coupling polymerization catalyst; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
IT 7550-45-0, Titanium tetrachloride, uses
RL: CAT (Catalyst use); USES (Uses)
(dehydration reaction catalyst; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
IT 409318-68-9P, 2,5-Dibromo-N,N'-diphenyl-1,4-Benzenediamine
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate and monomer and model compound; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
IT 495383-59-0, 2-Bromo-5-methyl-N,N'-diphenyl-1,4-Benzenediamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(intermediate; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
IT 495383-60-3 495383-63-6
RL: PRP (Properties)
(model compound; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
IT 599575-92-5P 599576-00-8P 599576-06-4P 599576-14-4P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(model compound; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
IT 409318-69-0P, Benzene-1,4-diboronic acid-2,5-dibromo-N,N'-diphenyl-1,4-Benzenediamine copolymer 409318-70-3P, Benzene-1,4-diboronic acid;2,5-dibromo-N,N'-diphenyl-1,4-Benzenediamine copolymer, SRU 409318-71-4P 409318-72-5P 599576-55-3P 599576-60-0P 599576-64-4P 599576-72-4P 599576-79-1P 599576-87-1P 599576-94-0P 599577-04-5P 599577-12-5P 599577-20-5P 599577-27-2P 599577-33-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
IT 62-53-3, Aniline, reactions 98-80-6, Benzeneboronic acid
1633-14-3, 2,5-Dibromo-1,4-benzoquinone 16245-79-7, 4-n-Octylaniline 54663-78-4, 2-(Tributylstannyl)thiophene 145483-63-2, 2,5-Bis(tributylstannyl)thiophene
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and

polythiophenes)
IT 599575-85-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Bao, Z; Chem Mater 1993, V5, P2 HCAPLUS
(2) Bao, Z; J Am Chem Soc 1995, V117, P12426 HCAPLUS
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(8) McQuade, D; Chem Rev 2000, V100, P2537 HCAPLUS
(9) Miller, L; J Org Chem 1995, V60, P6813 HCAPLUS
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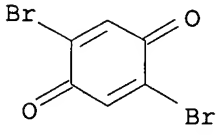
(21) Yamamoto, K; Bull Chem Soc Jpn 2002, V75, P1827 HCAPLUS
(22) Yamamoto, K; Chem Lett 2000, V1, P4
(23) Yamamoto, T; Macromolecules 1999, V32, P8886 HCAPLUS
(24) Zhu, S; J Am Chem Soc 1997, V119, P12568 HCAPLUS
(25) Zotti, G; Macromolecules 2002, V35, P2122 HCAPLUS
IT **1633-14-3**, 2,5-Dibromo-1,4-benzoquinone
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
RN 1633-14-3 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione, 2,5-dibromo- (9CI) (CA INDEX NAME)



L92 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:558383 HCAPLUS
DN 137:233020
ED Entered STN: 29 Jul 2002
TI Conjugated Polymer Liquid Crystal Solutions: Control of Conformation and Alignment
AU Zhu, Zhengguo; Swager, Timothy M.
CS Department of Chemistry, Massachusetts Institute of Technology, Cambridge,

MA, USA
SO Journal of the American Chemical Society (2002), 124(33), 9670-9671
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 73, 75

AB Fluorescent poly(phenylene vinylene)s and poly(phenylene ethynylene)s containing rigid triptycene groups were prepared using Suzuki and Sonogashira protocols. The triptycene groups impart extraordinary solubility to conjugated polymers even in the absence of flexible side chains; addnl. t-Bu groups were introduced, which were found to further enhance solubility Stable solns. of poly(phenylene vinylene)s and poly(phenylene ethynylene)s in nematic liquid crystal 1-(trans-4-hexylcyclohexyl)-4-isothiocyanatobenzene (6CHBT), Tm = 12.4°, TNI = 42.4° were prepared and studied in cells with rubbed internal polyimide surface that impart homogeneous alignment of the nematic liquid crystal. The conjugated polymer backbones align with the director of the nematic liquid crystal, and the polymers can be reoriented by applying an elec. field. The conjugated polymers all displayed lower band gap in the liquid crystal solvent relative to that obtained in standard solvents such as methylene chloride. The liquid crystal solution induces a **chain**-extended highly **conjugated** structure in the **polymers**, i.e., allows control of conformation and alignment, and results in enhanced charge transport and electroluminescence.

ST phenylene ethynylene conjugated polymer triptycene group prepn soly; polyphenylene polyacetylene triptycene group prepn dissoln liq crystal; hexylcyclohexyl isothiocyanatobenzene nematic liq crystal solvent conjugated polymer; alignment conformation conjugated polymer control soln liq crystal; fluorescence transport conjugated polymer soln liq crystal

IT Coupling reaction
(Sonogashira; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Molecular orientation
(alignment; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Polymer chains
(conformation; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Polymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conjugated; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Polymerization
(coupling reaction; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT **Polymer chains**
(length, **conjugated** segment; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Electric field effects
(mol. alignment; preparation of soluble poly(phenylene vinylene)s and

poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Liquid crystals
(nematic; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Band gap
(optical; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Polyphenyls
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyacetylene-; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Polyacetylenes, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyphenyl-; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Absorption spectra
Fluorescence
Luminescence, electroluminescence
Optical absorption
Solubility
Suzuki coupling reaction
(preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Poly(arylenealkenylenes)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT 13400-13-0, Cesium fluoride (CsF) 14221-01-3, Tetrakis(triphenylphosphine)palladium
RL: CAT (Catalyst use); USES (Uses)
(coupling polymerization catalyst; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT 603-35-0, Triphenylphosphine, uses
RL: CAT (Catalyst use); USES (Uses)
(ethynylation catalyst ligand; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT 32005-36-0, Bis(dibenzylideneacetone)palladium
RL: CAT (Catalyst use); USES (Uses)
(ethynylation catalyst; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT 7681-65-4, Cuprous iodide
RL: CAT (Catalyst use); USES (Uses)
(ethynylation co-catalyst; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and

alignment in liquid crystal solution and under elec. field)
IT 25015-63-8, 4,4,5,5-Tetramethyl-1,3,2-dioxoborolane
RL: RCT (Reactant); RACT (Reactant or reagent)
(intermediate and monomer; preparation of soluble poly(phenylene vinylene)s and
poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)
IT 402489-36-5P, 6,14-Di-tert-butyl-1,4-diethynyl-[1',2']benzenoanthracene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate and monomer; preparation of soluble poly(phenylene vinylene)s and
poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)
IT 402489-33-2P, 6,14-Di-tert-butyl-9,10-dihydro-9,10[1',2']benzenoanthracene-1,4-diol 402489-34-3P, 6,14-Di-tert-butyl-1,4-nonafluorobutanesulfonoxy-[1',2']benzenoanthracene 402489-35-4P, 6,14-Di-tert-butyl-1,4-bis(3-hydroxy-3-methyl-but-1-ynyl)-[1',2']benzenoanthracene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)
IT 536-74-3DP, Phenylacetylene, reaction products with poly(phenylene vinylene)-poly(phenylene ethynylene)s
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(low mol. weight; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)
IT 402489-37-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(monomer; preparation of soluble poly(phenylene vinylene)s and poly(phenylene
ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)
IT 92444-14-9, 6CHBT
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(nematic liquid crystal solvent; preparation of soluble poly(phenylene vinylene)s
and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)
IT 402489-38-7P 402489-39-8P 402489-44-5P 402727-65-5P 459457-80-8P 459457-81-9P 459457-82-0P 459457-83-1P 459457-84-2DP, ethynylbenzene-terminated 459457-85-3P 459457-86-4DP, ethynylbenzene-terminated 459457-87-5P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)
IT **106-51-4**, 1,4-Benzoquinone, reactions 115-19-5, 2-Methyl-3-butyn-2-ol 375-72-4, Perfluorobutylsulfonyl fluoride 62375-58-0, 2,6-Di-tert-butyl-anthracene
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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Chapter IX 1998, V2b, P781 HCAPLUS
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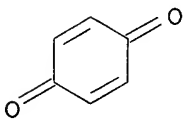
IT **106-51-4**, 1,4-Benzoquinone, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



L92 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:854856 HCAPLUS
DN 134:148109
ED Entered STN: 07 Dec 2000
TI Effect of acceptors on energetic disorder in poly(methylphenylsilane) films
AU Zaika, V. M.; Kadashchuk, A. K.; Ostapenko, N. L.; Skirshevs'kii, Yu. A.; Nespurek, S.
CS Inst. Phys., Natl. Acad. Sci., Kiev, 03028, Ukraine
SO Ukrains'kii Fizichnii Zhurnal (2000), 45(10), 1246-1249
CODEN: UFZHFY; ISSN: 0372-400X
PB Natsional'na Akademiya Nauk Ukraini, Viddilennya Fiziki i Astronomii
DT Journal
LA Ukrainian
CC 36-5 (Physical Properties of Synthetic High Polymers)
AB Effect of acceptor dopants on the energetic disorder of charge carrier localized states in poly(methylphenylsilante) films is studied by the low-temperature thermally stimulated luminescence and photoluminescence. Decreasing the energetic disorder parameter with increasing the acceptor dopants' concentration is explained by formation of charge-transfer complexes between acceptor mols. and the predominantly longest segments of σ-**conjugated polymer chains.**
ST polymethylphenylsilane chloroanil trinitrofluorenone electron acceptor energy disorder fluorescence
IT Electron acceptors
Fluorescence
(effect of electron acceptors on energetic disorder in poly(methylphenylsilane) films)
IT Polysilanes
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(effect of electron acceptors on energetic disorder in poly(methylphenylsilane) films)
IT 76188-55-1, Poly(methylphenylsilane) 146088-00-8, Poly(methylphenylsilane)
RL: PEP (Physical, engineering or chemical process); PRP (Properties);

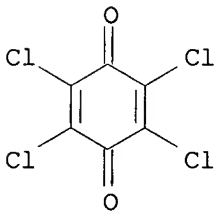
PROC (Process)
(effect of electron acceptors on energetic disorder in poly(methylphenylsilane) films)

IT **118-75-2**, uses 129-79-3
RL: NUU (Other use, unclassified); USES (Uses)
(electron acceptor additive; effect of electron acceptors on energetic disorder in poly(methylphenylsilane) films)

IT **118-75-2**, uses
RL: NUU (Other use, unclassified); USES (Uses)
(electron acceptor additive; effect of electron acceptors on energetic disorder in poly(methylphenylsilane) films)

RN 118-75-2 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)



L92 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:358596 HCAPLUS

DN 133:90040

ED Entered STN: 31 May 2000

TI Linearly extended π-conjugated dithiafulvene polymer formed soluble charge-transfer complex with 7,7,8,8-tetracyanoquinodimethane

AU Naka, Kensuke; Uemura, Takashi; Chujo, Yoshiki

CS Department of Polymer Chemistry, Graduate School of Engineering, Kyoto University, Kyoto, 606-8501, Japan

SO Polymer Journal (Tokyo) (2000), 32(5), 435-439
CODEN: POLJB8; ISSN: 0032-3896

PB Society of Polymer Science, Japan

DT Journal

LA English

CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 76

AB A soluble charge-transfer (CT) complex of π-conjugated donor polymer with 7,7,8,8-tetracyanoquinodimethane (TCNQ) was formed when TCNQ was added to a DMSO solution of π-conjugated poly(dithiafulvene) (PDTF). In DMSO, PDTF reacted with TCNQ to produce a dark green solution After the precipitated TCNQ was filtered, the filtrate was evaporated to obtain a dark green powder. The resulting CT complex was soluble in acetonitrile, DMSO, N,N-dimethylformamide (DMF), acetone, and MeOH, and partially soluble in THF. The UV-Vis absorption spectra suggest formation of the CT complex containing about 1: 1 ratio of dithiafulvene unit to TCNQ. The UV-Vis absorption and FTIR data indicate that the anion radical of TCNQ was initially formed by charge-transfer reaction when TCNQ was added to the solution of PDTF, and the remaining TCNQ interacted with PDTF as a partially charge-transferred form. In the 1H NMR spectra, the broad peak attributed to the benzylidene proton of PDTF was shifted to a lower magnetic field proportional to the TCNQ feed ratio against the dithiafulvene unit of PDTF. The CT complex has a conductivity of 2 + 10-4 S cm-1, three orders of magnitude greater

than that of uncomplexed polymer.

ST polydithiafulvene conjugated polymer charge transfer complex TCNQ; tetracyanoquinodimethane charge transfer complex polydithiafulvene cond; polyacetylene polydithiafulvene prepn TCNQ complex elec cond

IT Polymers, properties
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conjugated; preparation and absorption spectra of highly conductive linear dithiafulvene polymer charge-transfer complexes with TCNQ)

IT Redox reaction
(electrochem.; preparation and absorption spectra of highly conductive linear dithiafulvene polymer charge-transfer complexes with TCNQ)

IT **Polymer chains**
(extended **conjugated**; preparation and absorption spectra of highly conductive linear dithiafulvene polymer charge-transfer complexes with TCNQ)

IT Polyacetylenes, properties
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polydithiafulvene; preparation and absorption spectra of highly conductive linear dithiafulvene polymer charge-transfer complexes with TCNQ)

IT Absorption spectra
Charge transfer interaction
(preparation and absorption spectra of highly conductive linear dithiafulvene polymer charge-transfer complexes with TCNQ)

IT Charge transfer complexes
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and absorption spectra of highly conductive linear dithiafulvene polymer charge-transfer complexes with TCNQ)

IT Electric conductivity
(semicond.; preparation and absorption spectra of highly conductive linear dithiafulvene polymer charge-transfer complexes with TCNQ)

IT 15995-11-6, 2-Benzylidene-4-phenyl-1,3-dithiole
RL: PRP (Properties)
(model compound; preparation and absorption spectra of highly conductive linear dithiafulvene polymer charge-transfer complexes with TCNQ)

IT **1518-16-7**, TCNQ
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(preparation and absorption spectra of highly conductive linear dithiafulvene polymer charge-transfer complexes with TCNQ)

IT 108414-62-6P, Sulfur, polymer with 1,4-diethynylbenzene 215318-18-6P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and absorption spectra of highly conductive linear dithiafulvene polymer charge-transfer complexes with TCNQ)

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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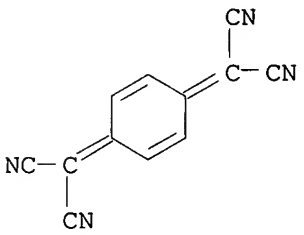
IT **1518-16-7**, TCNQ
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(preparation and absorption spectra of highly conductive linear dithiafulvene polymer charge-transfer complexes with TCNQ)

RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



L92 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:807883 HCAPLUS
DN 132:93749
ED Entered STN: 23 Dec 1999
TI Syntheses and properties of π-conjugated polymers containing tetrathiafulvalene in the polymer backbone
AU Tamura, Hiroshi; Watanabe, Tsuchitsugu; Imanishi, Kazukiyo; Sawada, Makoto
CS Faculty of Engineering and High Technology Research Center, Kansai University, Suita, 564-8680, Japan
SO Synthetic Metals (1999), 107(1), 19-25
CODEN: SYMEDZ; ISSN: 0379-6779
PB Elsevier Science S.A.
DT Journal
LA English
CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 73, 76
AB Tetrathiafulvalene (TTF)-containing π-conjugated polymers were prepared from dibrominated TTF derivs. and diboronic acid derivs. using the Suzuki coupling reaction. The polymers have mol. weight of 12,900-36,700 and excellent solubility in conventional organic solvents, attributed to the alkoxy chain. The electrochromism of the polymers was studied using spin-coated films on ITO glass plate; the color of the film changed reversibly from yellow to red purple depending on the applied potential. The electrochromic response was rapid and reproducible over a thousand redox cycles. Optoelectrochem. measurements of spin-coated polymer films revealed that the color change was associated with the electronic state of the TTF moiety, and the charge-transfer band to intermol. interactions

between TTF moieties in different polymer chains.

ST tetrathiafulvalene diboronic acid deriv copolymer Suzuki coupling; conjugated polymer tetrathiafulvalene electrochromism charge transfer; conducting polymer charge transfer tetrathiafulvalene main chain

IT Polymerization
(Suzuki coupling; preparation and electrochromism and charge transfer of electroactive π- **conjugated polymers** with tetrathiafulvalene main **chain**)

IT Redox reaction
(electrochem.; preparation and electrochromism and charge transfer of electroactive π- **conjugated polymers** with tetrathiafulvalene main **chain**)

IT Absorption spectra
(optoelectrochem.; preparation and electrochromism and charge transfer of electroactive π- **conjugated polymers** with tetrathiafulvalene main **chain**)

IT Polymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polytetrathiafulvalenes, polyphenylene; preparation and electrochromism and charge transfer of electroactive π- **conjugated polymers** with tetrathiafulvalene main **chain**)

IT Cyclization
Electric conductivity
Electrochromic materials
Electrochromism
Electron transfer
(preparation and electrochromism and charge transfer of electroactive π- **conjugated polymers** with tetrathiafulvalene main **chain**)

IT Polyphenyls
RL: MOA (Modifier or additive use); USES (Uses)
(tetrathiafulvalene group containing; preparation and electrochromism and charge transfer of electroactive π- **conjugated polymers** with tetrathiafulvalene main **chain**)

IT 14221-01-3, Tetrakis(triphenylphosphine)palladium
RL: CAT (Catalyst use); USES (Uses)
(coupling polymerization catalyst; preparation and electrochromism and charge transfer of electroactive π- **conjugated polymers** with tetrathiafulvalene main **chain**)

IT 122-52-1, Triethyl phosphite
RL: NUU (Other use, unclassified); USES (Uses)
(coupling reagent; preparation and electrochromism and charge transfer of electroactive π- **conjugated polymers** with tetrathiafulvalene main **chain**)

IT 7601-90-3, Perchloric acid, uses
RL: NUU (Other use, unclassified); USES (Uses)
(cyclization reagent; preparation and electrochromism and charge transfer of electroactive π- **conjugated polymers** with tetrathiafulvalene main **chain**)

IT 7553-56-2, Iodine, uses
RL: MOA (Modifier or additive use); USES (Uses)
(dopant; preparation and electrochromism and charge transfer of electroactive π- **conjugated polymers** with tetrathiafulvalene main **chain**)

IT 1861-49-0P, O-Isopropyl-S-(p-bromophenacyl)dithiocarbonate 42574-14-1P, 4-(p-Bromophenyl)-1,3-dithiol-2-one 128424-36-2P, 2,5-Dibromo-1,4-dihexyloxybenzene 137436-30-7P, 2,5-Dibromo-1,4-didodecyloxybenzene

171089-85-3P, 1,4-Dihexyloxy-2,5-phenyldiboronic acid 211692-94-3P, 1,4-Didodecyloxy-2,5-phenyldiboronic acid
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; preparation and electrochromism and charge transfer of electroactive π- **conjugated polymers** with tetrathiafulvalene main **chain**)

IT **61485-52-7P**, Bis(p-bromophenyl)tetrathiafulvalene 241802-45-9P, 1,4-Dihexyloxy-2,5-phenyldiboronic acid 1,3-propanediol diester 254907-55-6P, 1,4-Didodecyloxy-2,5-phenyldiboronic acid 1,3-propanediol diester
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation and electrochromism and charge transfer of electroactive π- **conjugated polymers** with tetrathiafulvalene main **chain**)

IT 254907-58-9P, Bis(p-bromophenyl)tetrathiafulvalene-1,4-dihexyloxy-2,5-phenyldiboronic acid 1,3-propanediol diester copolymer 254907-61-4P, Bis(p-bromophenyl)tetrathiafulvalene-1,4-dihexyloxy-2,5-phenyldiboronic acid 1,3-propanediol diester copolymer, SRU 254907-65-8P, Bis(p-bromophenyl)tetrathiafulvalene-1,4-didodecyloxy-2,5-phenyldiboronic acid 1,3-propanediol diester copolymer 254907-68-1P, Bis(p-bromophenyl)tetrathiafulvalene-1,4-didodecyloxy-2,5-phenyldiboronic acid 1,3-propanediol diester copolymer, SRU
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and electrochromism and charge transfer of electroactive π-**conjugated polymers** with tetrathiafulvalene main **chain**)

IT 99-73-0, p-Bromophenacyl bromide 121-43-7, Trimethoxyborane 140-92-1, Potassium isopropylxanthate 504-63-2, 1,3-Propanediol 3230-09-9, 1,4-Didodecyloxybenzene 7726-95-6, Bromine, reactions 67399-93-3, 1,4-Dihexyloxybenzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and electrochromism and charge transfer of electroactive π-**conjugated polymers** with tetrathiafulvalene main **chain**)

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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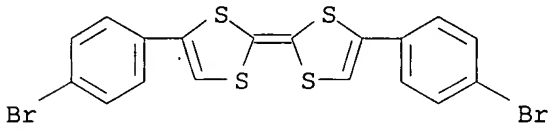
(16) Torrance, J; Phys Rev B 1979, V19, P730 HCAPLUS
(17) Yamamoto, T; J Mater Chem 1997, V7, P1967 HCAPLUS

IT **61485-52-7P**, Bis(p-bromophenyl)tetrathiafulvalene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation and electrochromism and charge transfer of

electroactive π- **conjugated polymers** with tetrathiafulvalene main **chain**)

RN 61485-52-7 HCAPLUS

CN 1,3-Dithiole, 4-(4-bromophenyl)-2-[4-(4-bromophenyl)-1,3-dithiol-2-ylidene]- (9CI) (CA INDEX NAME)



L92 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:732359 HCAPLUS

DN 130:82108

ED Entered STN: 19 Nov 1998

TI Polydiacetylenes with Long Wavelength Absorption

AU Foley, James L.; Li, Lian; Sandman, Daniel J.

CS Center for Advanced Materials Department of Chemistry, University of Massachusetts Lowell, Lowell, MA, 01854-2881, USA

SO Chemistry of Materials (1998), 10(12), 3984-3990
CODEN: CMATEX; ISSN: 0897-4756

PB American Chemical Society

DT Journal

LA English

CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 35, 73

AB A series of 1,6-disubstituted-2,4-hexadiynes, where the substituents are para-substituted benzene rings that have either a dicyanovinyl or tricyanovinyl group as one substituent and have either an oxygen or N-alkyl group connecting to the hexadiyne chain, was designed to lead to polydiacetylenes (PDAs) with long wavelength absorption, and these PDAs were synthesized. The new compds., in contrast to other diacetylene monomers, are relatively insensitive to UV light and ionizing radiation under ambient temperature and require heating above 100° to bring about preparatively useful conversion to polymer. The new PDAs have the usual en-yne backbone structure as shown by Raman spectroscopy. Three of the new PDAs exhibit maxima in diffuse reflectance at wavelengths as long as or longer than the PDA of 1,6-di-N-carbazolyl-2,4-hexadiyne.

ST polydiacetylene cyanovinylbenzene substituted hexadiyne prepn UV sensitivity; reflectance optical absorption polydiacetylene cyanovinylbenzene substituent; **conjugated polymer** cyanovinylbenzene hexadiyne **chain** structure

IT Polymers, properties
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conjugated, cyanovinylbenzene-substituted polydiacetylenes; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)

IT **Polymer chains**
(**conjugation** length; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)

IT Optical reflection
(diffuse; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)

IT Polydiacetylenes
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(hexadiyne-containing; preparation of cyanovinylbenzene chromophore-substituted
hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
IT Coupling reaction
(oxidative; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
IT Electronic excitation
Formylation
Knoevenagel reaction
Optical absorption
(preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
IT Polymerization
(solid-state, thermally induced; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
IT Polymerization
(thermally induced; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
IT 218625-27-5P, 1,6-Bis(N-[p-formylphenyl]-N-methylamino)-2,4-hexadiyne
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer precursor; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
IT 208054-22-2P, 1,6-Bis(N-methyl-N-[p-tricyanovinylphenyl]amino)-2,4-hexadiyne 208054-23-3P 208054-25-5P, 1,6-Bis(p-oxybenzylidenemalononitrile)-2,4-hexadiyne 213555-58-9P, 1,6-Bis(N-methyl-N-[p-dicyanovinylphenyl]amino)-2,4-hexadiyne
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
IT 110-91-8, Morpholine, uses
RL: CAT (Catalyst use); USES (Uses)
(preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
IT 208054-26-6P, 1,6-Bis(N-methyl-N-[p-tricyanovinylphenyl]amino)-2,4-hexadiyne homopolymer 208054-27-7P, 1,6-Bis(N-ethyl-N-[p-tricyanovinylphenyl]amino)-2,4-hexadiyne homopolymer 208054-29-9P, 1,6-Bis(p-oxybenzylidenemalononitrile)-2,4-hexadiyne homopolymer
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
IT 109-77-3, Malononitrile 110-18-9 123-08-0, p-Hydroxybenzaldehyde **670-54-2**, Tetracyanoethylene, reactions 4282-82-0, N-Methyl-N-propargylaniline 7758-89-6, Copper chloride (CuCl) 10025-87-3, Phosphorus chloride oxide (PCl3O) 18158-72-0, N-Ethyl-N-propargylaniline 75354-81-3, 1,6-Bis(p-toluenesulfonate)-2,4-hexadiyne 75464-41-4, 1,6-Bis(N-methyl-N-phenylamino)-2,4-hexadiyne

RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)

IT 18158-85-5P, 1,6-Bis(N-ethyl-N-phenylamino)-2,4-hexadiyne 210365-59-6P, 1,6-Bis(p-oxybenzaldehyde)-2,4-hexadiyne 218625-28-6P, 4-(N-Methyl-N-propargylamino)benzaldehyde 218625-29-7P, p-Dicyanovinyl-N-methyl-N-propargylaniline 218625-30-0P, p-Tricyanovinyl-N-methyl-N-propargylaniline
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)

RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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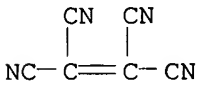
IT **670-54-2**, Tetracyanoethylene, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
RN 670-54-2 HCAPLUS
CN Ethenetetracarbonitrile (6CI, 8CI, 9CI) (CA INDEX NAME)



L92 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:628179 HCAPLUS
DN 129:331126
ED Entered STN: 06 Oct 1998
TI Synthesis of π-Conjugated Poly(dithiafulvene) by Cycloaddition Polymerization of Aldothioketene with Its Alkynethiol Tautomer
AU Naka, Kensuke; Uemura, Takashi; Chujo, Yoshiki
CS Department of Polymer Chemistry Graduate School of Engineering, Kyoto University, Yoshida Sakyo-ku Kyoto, 606-8501, Japan
SO Macromolecules (1998), 31(21), 7570-7571
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36
AB A π-conjugated polymer having electron-donating 1,3-dithiafulvene units in the main chain was prepared by cycloaddn. polymerization of the aldothioketene from 1,4-diethynylbenzene with its alkynethiol tautomer. Poly(1,3-dithiafulvene)s were also prepared in good yield using various aromatic diynes and. The UV-vis spectra indicates that the π-π* transition of some of the polymers is observed at 398 nm, largely bathochromic-shifted in comparison with the model compound 2-benzylidene-4-phenyl-1,3-dithiole, ascribed to effective expansion of the π-conjugation system in the polymers. In DMSO, polymers reacted with TCNQ to produce a dark green CT [charge transfer complex], with a major maximum in the visible region of the spectrum at 840 nm and minor bands at 744, 760, 680, and 665 nm, which are responsible for the anion radical of TCNQ. The CT complex of this π-conjugated polymer having 1,3-dithiafulvene unit is a new class of π-conjugated CT complexes.
ST dithiafulvene aldothioketene alkynethiol conjugated polymer prepn; charge transfer complex TCNQ polythiafulvene
IT Polymers, preparation
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(conjugated, extended π-; preparation of π-conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols

and formation of charge transfer complexes with TCNQ)

IT Polymerization
(cyclopolymn.; preparation of π-conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)

IT **Polymer chains**
(length; preparation of π- **conjugated** poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)

IT **Polymer chains**
(orientation; preparation of π- **conjugated** poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)

IT Polyacetylenes, preparation
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polydithiafulvenes; preparation of π-conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)

IT Bathochromic effect
Cycloaddition reaction
Electron transfer
Optical absorption
(preparation of π-conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)

IT Charge transfer complexes
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of π-conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)

IT 15995-11-6P, 2-Benzylidene-4-phenyl-1,3-dithiole 24815-46-1P, Phenylthioacetopiperidide
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(model compound; preparation of π-conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)

IT 108414-62-6P 215318-18-6P 215318-19-7P 215318-20-0P 215318-21-1P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of π-conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)

IT 109-72-8, n-Butyllithium, reactions 110-89-4D, Piperidine, reaction products with poly(dithiafulvenes), reactions 935-14-8 **1518-16-7** 7704-34-9, Sulfur, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of π-conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD

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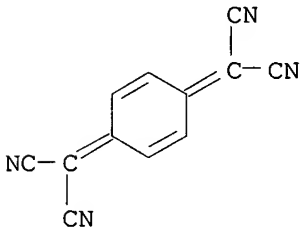
IT **1518-16-7**
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of π-conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)

RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



L92 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:532250 HCAPLUS
DN 129:261127
ED Entered STN: 24 Aug 1998
TI Photoluminescence properties of dialkoxy poly(1,4-naphthalenevinylene) (PNV) homopolymers and copolymers synthesized by ROMP-aromatization route
AU Elder, Delwin L.; Wagaman, Michael W.; Grubbs, Robert H.
CS Division of Chemistry and Chemical Engineering, Arnold and Mabel Beckman Laboratory of Chemical Synthesis, Pasadena, CA, 91125, USA
SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1998), 39(2), 733-734
CODEN: ACPPAY; ISSN: 0032-3934
PB American Chemical Society, Division of Polymer Chemistry
DT Journal
LA English
CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 35, 74
AB Conjugated polymers poly(1,4-naphthalenevinylene)s (PNV)s di-substituted with electron-donating alkoxy substituents were synthesized by ring-opening metathesis polymerization (ROMP) of barrelene and benzobarrelene monomers followed by aromatization with DDQ. The polymers are soluble in common organic solvents and are strongly luminescent, making them good candidates for the emissive component of organic light emitting diodes (OLEDs). The wavelength of photoemission of the benzobarrelene analog (534 nm, green) is blue shifted relative to unsubstituted PNV, contrary to theor. predictions and previous expts. with dialkoxy substituted

poly-(p-phenylenevinylenes) (PPVs). This is believed to be the result of the bulky alkoxy side **chains** causing twists in the **polymer** backbone, thus reducing the average **conjugation** length.

ST polynaphthalenevinylene prepn barrelene monomer ROMP aromatization; photoluminescence polynaphthalenevinylene alkoxy side chain conjugation; **conjugated polymer** benzobarrelene luminescence **chain** length

IT Poly(arylenealkenylenes)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(benzobarrelene-containing, alkoxy-substituted; preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)

IT Polymers, properties
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conjugated, benzobarrelene-containing, alkoxy-substituted; preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)

IT **Polymer chains**
(length, **conjugated** segment length; preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)

IT Polymerization
(metathetic, ring-opening; preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)

IT Aromatization
Luminescence
(preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)

IT Polymer chains
(side, alkoxy; preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)

IT 213664-38-1P 213664-39-2P 213664-40-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)

IT 135505-85-0
RL: CAT (Catalyst use); USES (Uses)
(preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)

IT 213664-41-6DP, aromatized 213664-42-7DP, aromatized 213664-43-8DP, aromatized 213664-44-9DP, aromatized 213664-45-0DP, aromatized 213664-46-1DP, aromatized 213664-47-2DP, aromatized
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)

IT 75-03-6, Ethyl iodide **84-58-2**, DDQ **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, reactions 111-83-1, Octyl bromide 865-47-4 1653-16-3 153656-86-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by

ROMP-aromatization route)
IT 213664-37-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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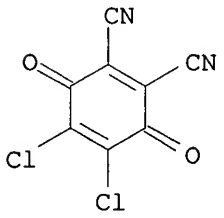
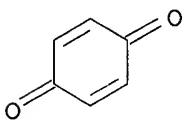
IT **84-58-2**, DDQ **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)
RN 84-58-2 HCAPLUS
CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)

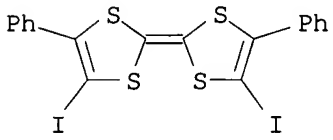


L92 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:681473 HCAPLUS

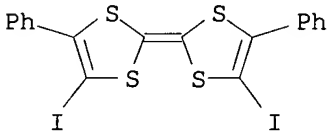
DN 127:332114
ED Entered STN: 27 Oct 1997
TI New π-conjugated polymers containing tetrathiafulvalene as the monomeric unit
AU Yamamoto, Takakazu; Shimizu, Takahisa
CS Research Laboratory of Resources Utilization, Tokyo Institute of Technology, Yokohama, 226, Japan
SO Journal of Materials Chemistry (1997), 7(10), 1967-1968
CODEN: JMACEP; ISSN: 0959-9428
PB Royal Society of Chemistry
DT Journal
LA English
CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 35, 72
AB Four kinds of poly(arylene)- and poly(aryleneethynylene)-type **polymers** containing TTF units in the π- **conjugated** main **chain**, which are susceptible to chemical and electrochem. oxidation, have been prepared by organometallic polycondensation.
ST conjugated polymer contg tetrathiafulvalene prepn; polyaryleneethynylene prepn electrochem oxidn
IT Polymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conjugated; preparation and electrochem. activity of π-conjugated polymers containing tetrathiafulvalene as monomeric unit)
IT Electric current-potential relationship
Polymerization
Polymerization catalysts
(preparation and electrochem. activity of π-conjugated polymers containing tetrathiafulvalene as monomeric unit)
IT Poly(arylenealkenylenes)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and electrochem. activity of π-conjugated polymers containing tetrathiafulvalene as monomeric unit)
IT 355-43-1, Perfluorohexyl iodide
RL: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of monomers for π-conjugated polymers containing tetrathiafulvalene unit)
IT 1295-35-8, Bis(cycloocta-1,5-diene)nickel 14221-01-3, Tetrakis(triphenylphosphine)palladium
RL: CAT (Catalyst use); USES (Uses)
(preparation and electrochem. activity of π-conjugated polymers containing tetrathiafulvalene as monomeric unit)
IT **197842-34-5P** 197842-41-4P 197842-44-7P 197842-47-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and electrochem. activity of π-conjugated polymers containing tetrathiafulvalene as monomeric unit)
IT **197842-33-4P 197842-43-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and polymerization of monomers for π-conjugated polymers containing tetrathiafulvalene unit)
IT **197842-34-5P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and electrochem. activity of π-conjugated polymers containing tetrathiafulvalene as monomeric unit)
RN 197842-34-5 HCAPLUS
CN 1,3-Dithiole, 4-iodo-2-(4-iodo-5-phenyl-1,3-dithiol-2-ylidene)-5-phenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

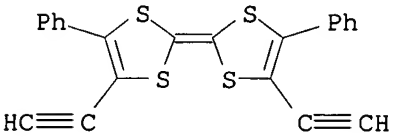
CRN 197842-33-4
CMF C18 H10 I2 S4



IT **197842-33-4P 197842-43-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and polymerization of monomers for π-conjugated polymers containing
tetrathiafulvalene unit)
RN 197842-33-4 HCAPLUS
CN 1,3-Dithiole, 4-iodo-2-(4-iodo-5-phenyl-1,3-dithiol-2-ylidene)-5-phenyl- (9CI) (CA INDEX NAME)



RN 197842-43-6 HCAPLUS
CN 1,3-Dithiole, 4-ethynyl-2-(4-ethynyl-5-phenyl-1,3-dithiol-2-ylidene)-5-phenyl- (9CI) (CA INDEX NAME)



L92 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:88716 HCAPLUS
DN 126:185710
ED Entered STN: 07 Feb 1997
TI A Novel Synthetic Metal Catalytic System
AU Higuchi, Masayoshi; Ikeda, Isao; Hirao, Toshikazu
CS Department of Applied Chemistry Faculty of Engineering, Osaka University, Suita, 565, Japan
SO Journal of Organic Chemistry (1997), 62(4), 1072-1078
CODEN: JOCEAH; ISSN: 0022-3263
PB American Chemical Society
DT Journal
LA English
CC 22-7 (Physical Organic Chemistry)

Section cross-reference(s): 34, 35, 36, 67, 72
OS CASREACT 126:185710
AB π-Conjugate polymers, polyanilines and polypyrroles, serve as catalysts in dehydrogenative oxidation reactions of benzylamines, 2-phenylglycine, and 2,6-di-tert-butylphenol under oxygen. The catalytic activity was controlled by protonic acid doping. The reversible redox of the polyaniline catalyst under oxygen was supported by UV-visible spectroscopy. Polyaniline and transition metal such as copper(II) chloride or iron(III) chloride formed a complex, which was effective in the dehydrogenative oxidation of cinnamyl alc. or mandelic acid. In the complex system, transition metals are considered to electronically interact through a π- **conjugate polymer chain**. Protonic acid doping and transition metal doping play an important role in reversible redox processes of polyanilines.
ST synthetic metal catalytic system; oxidative dehydrogenation catalytic
IT Transamination
Transamination
(catalysts; synthetic metal catalytic systems)
IT Redox reaction
(electrochem.; synthetic metal catalytic systems)
IT Coupling reaction
Coupling reaction catalysts
Dehydrogenation
Dehydrogenation catalysts
(oxidative; synthetic metal catalytic systems)
IT Cyclic voltammetry
Dehydrogenation
Dehydrogenation catalysts
Oxidation
Oxidation, electrochemical
Oxidation catalysts
Polymer-supported reagents
Protonation
Redox reaction
Reduction, electrochemical
Solvent effect
Transamination
UV and visible spectra
(synthetic metal catalytic systems)
IT Transition metal compounds
RL: CAT (Catalyst use); USES (Uses)
(synthetic metal catalytic systems)
IT Polyamines
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(synthetic metal catalytic systems)
IT Aldehydes, preparation
Imines
Schiff bases
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthetic metal catalytic systems)
IT Amination catalysts
Amination catalysts
(transamination; synthetic metal catalytic systems)
IT Polymers, reactions
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(π-conjugated; synthetic metal catalytic systems)
IT 100-51-6, Benzyl alcohol, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(attempted oxidation; synthetic metal catalytic systems)

IT 7447-39-4DP, Cupric chloride, polymer complexed 15158-11-9DP, Copper, ion(2+), polymer complexed, reactions 25233-30-1P
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(synthetic metal catalytic systems)

IT 1801-77-0DP, Ethoxyvanadyl dichloride, polymer complexed 7727-54-0DP, polymer complexed 22537-31-1DP, Vanadium, ion(5+), polymer complexed, reactions 25233-30-1DP, doped 27082-18-4DP, doped 27082-18-4P 30604-81-0DP, doped 30604-81-0P 38465-60-0DP, Copper tetrafluoroborate, polymer complexed 72945-66-5DP, doped 72945-66-5P 97917-08-3DP, doped 97917-08-3P 99742-70-8DP, doped 99742-70-8P 159539-55-6DP, doped 159539-55-6P
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(synthetic metal catalytic systems)

IT 7447-39-4, Cupric chloride, reactions 7647-01-0D, Hydrogen chloride, polymer doped by 7705-08-0, Ferric chloride, reactions 7705-08-0D, Ferric chloride, polymer complexed 20074-52-6D, polymer complexed, reactions 27176-87-0D, Dodecylbenzenesulfonic acid, polymer doped by
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(synthetic metal catalytic systems)

IT 62-53-3, Aniline, reactions 95-53-4, o-Toluidine, reactions 96-54-8, N-Methylpyrrole 100-61-8, N-Methylaniline, reactions 109-97-7, Pyrrole 111-25-1, Hexyl bromide 554-84-7 1801-77-0, Ethoxyvanadyl dichloride 7727-54-0 38465-60-0, Copper tetrafluoroborate
RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(synthetic metal catalytic systems)

IT 55792-43-3P, 3-(Hexyloxy)aniline 131770-65-5P
RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(synthetic metal catalytic systems)

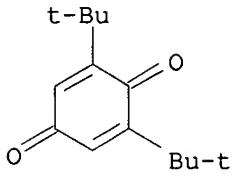
IT 90-64-2, Mandelic acid 91-00-9, Diphenylmethylamine 100-46-9, Benzylamine, reactions 104-54-1, Cinnamyl alcohol 109-73-9, Butylamine, reactions 128-39-2, 2,6-Di-tert-butylphenol 2835-06-5, 2-Phenylglycine 7782-44-7, Oxygen, reactions
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(synthetic metal catalytic systems)

IT 100-52-7P, Benzaldehyde, preparation 104-55-2P **719-22-2P** 780-25-6P 1077-18-5P 2455-14-3P 5350-59-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthetic metal catalytic systems)

IT **719-22-2P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthetic metal catalytic systems)

RN 719-22-2 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione, 2,6-bis(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



L92 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:469048 HCAPLUS
DN 121:69048
ED Entered STN: 06 Aug 1994
TI Electroluminescent and electrochromic elements
IN Yoshimura, Tetsuzo; Tatsura, Satoshi; Toyama, Wataru
PA Fujitsu Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09K011-06
ICS C09K009-02; G02F001-15; H05B033-14
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05271651	A2	19931019	JP 1992-67917	19920326
PRAI	JP 1992-67917		19920326		

AB An electroluminescent element comprises: (1) an n electrode, (2) an n-polymer, (3) a phosphor, (4) a p-polymer, and (5) a p-electrode layer, wherein (3) comprises the phosphor monomer, or the monomers of (2); (3) and (4) form a **polymeric conjugated chain;** and the **polymers** are formed by gas-phase polymerization An electrochromic element comprises: a cathode layer; an active layer comprising ≥1 linear polymer linking an electron block, a donor, and an acceptor unit; and an anode layer, wherein the manufacturing process using a vapor deposition comprises the steps of: forming a monomol. layer of a 1st monomer on a substrate; depositing a 2nd monomer onto the 1st monomer layer for forming a dimeric mol. of the 1st and the 2nd monomer; and forming a **conjugated polymeric chain** by a subsequent step-grown polycondensation. In both the elements, the polymer chains are approx. perpendicular to the electrode layers.
ST electroluminescent conductive polymer heterostructure vapor polymn; electrochromic conductive polymer heterostructure vapor deposition
IT Optical materials
(conductive polymer pn heterostructures, electroluminescent and electrochromic elements from)
IT Electroluminescent devices
(containing conductive polymer)
IT Semiconductor materials
(polymeric, pn heterostructures from, electroluminescent and electrochromic elements containing)
IT Optical imaging devices
(electrochromic, containing conductive polymer heterostructure)
IT 154873-24-2
RL: PRP (Properties)

(conductive, electroluminescent elements containing)

IT **1518-16-7 29261-33-4**
RL: PRP (Properties)
(electrochromic elements from, as electron-acceptor component in polymer chains)

IT 101-81-5 101-84-8
RL: PRP (Properties)
(electrochromic elements from, as electron-block component in polymer chains)

IT **31366-25-3 51501-77-0 66946-48-3**
RL: PRP (Properties)
(electrochromic elements from, as electron-donor component in polymer chains)

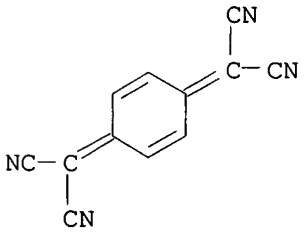
IT 23749-58-8 100734-29-0 101955-82-2 143761-89-1 156309-10-3
RL: PRP (Properties)
(electroluminescent elements containing, as monomeric or polymeric phosphors)

IT 154874-31-4 154874-34-7
RL: PRP (Properties)
(n-conductive, electroluminescent elements containing)

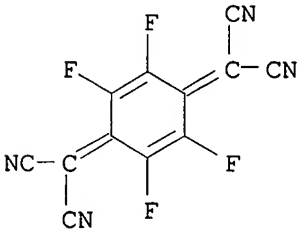
IT 25280-01-7 154873-21-9
RL: PRP (Properties)
(p-conductive, electroluminescent elements containing)

IT **1518-16-7 29261-33-4**
RL: PRP (Properties)
(electrochromic elements from, as electron-acceptor component in polymer chains)

RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)

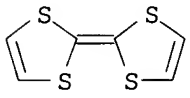


RN 29261-33-4 HCAPLUS
CN Propanedinitrile, 2,2'-(2,3,5,6-tetrafluoro-2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)

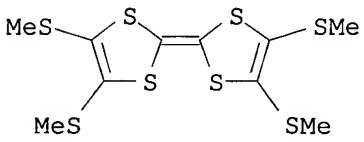


IT **31366-25-3 51501-77-0 66946-48-3**
RL: PRP (Properties)

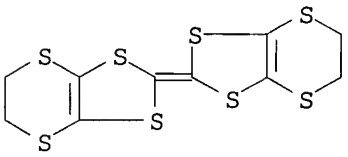
(electrochromic elements from, as electron-donor component in polymer chains)
RN 31366-25-3 HCAPLUS
CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



RN 51501-77-0 HCAPLUS
CN 1,3-Dithiole, 2-[4,5-bis(methylthio)-1,3-dithiol-2-ylidene]-4,5-bis(methylthio)- (9CI) (CA INDEX NAME)



RN 66946-48-3 HCAPLUS
CN 1,3-Dithiolo[4,5-b][1,4]dithiin, 2-(5,6-dihydro-1,3-dithiolo[4,5-b][1,4]dithiin-2-ylidene)-5,6-dihydro- (9CI) (CA INDEX NAME)



L92 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:175874 HCAPLUS
DN 116:175874
ED Entered STN: 03 May 1992
TI Preparation and composition of vulcanizable liquid block copolymer rubbers
IN Coolbaugh, Thomas Smith; Loveless, Frederick Charles; Matthews, Demetreos Nestor; Rudnick, Leslie Robert
PA Mobil Oil Corp., USA
SO Eur. Pat. Appl., 33 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C08F236-04
ICS C08F297-02; C08F008-04
CC 39-4 (Synthetic Elastomers and Natural Rubber)
FAN.CNT 20

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 441485	A2	19910814	EP 1991-300317	19910116
EP 441485	A3	19920318		
EP 441485	B1	19960515		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE

	US 5149895	A	19920922	US 1990-466135	19900116
	CA 2034196	AA	19910717	CA 1991-2034196	19910115
	CA 2034196	C	19980428		
	FI 9100213	A	19910717	FI 1991-213	19910115
	FI 99210	B	19970715		
	FI 99210	C	19971027		
	NO 9100162	A	19910717	NO 1991-162	19910115
	AU 9169338	A1	19910718	AU 1991-69338	19910115
	AU 649990	B2	19940609		
	BR 9100180	A	19911022	BR 1991-180	19910116
	CN 1055743	A	19911030	CN 1991-101147	19910116
	CN 1051776	B	20000426		
	JP 06128340	A2	19940510	JP 1991-216664	19910116
	JP 07116272	B4	19951213		
	AT 138083	E	19960615	AT 1991-300317	19910116
	ES 2087238	T3	19960716	ES 1991-300317	19910116
	NO 9703583	A	19910717	NO 1997-3583	19970804
	WO 9925744	A1	19990527	WO 1997-US21224	19971118
	W: AU, BR, CA, CN, JP, KR, MX, RU, SG				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9854492	A1	19990607	AU 1998-54492	19971118
	EP 1032601	A1	20000906	EP 1997-948417	19971118
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	CN 1238345	A	19991215	CN 1999-106953	19990529
PRAI	US 1990-466135	A	19900116		
	WO 1997-US21224	A	19971118		

AB Vulcanizable liquid tri- or star-branched block copolymer rubbers, having unsatn. only in the terminal blocks, comprise ≥1 triblock I-B-I, wherein I is a block of polymerized conjugated C≥5 diene and B is a block of polymerized conjugated C≥4 diene, different from I, or alternatively, a block copolymer containing a minor proportion of an aryl-substituted olefin. The liquid rubbers can be vulcanized through a substantially perfect network exhibiting improved elastomeric properties and a high degree of oxidative and thermal stabilities. The rubbers are prepared by anionic polymerization of conjugated dienes, coupling, and selective hydrogenation. Thus, isoprene (I)-butadiene (II)-I triblock copolymer, prepared by anionic polymerization of I and II in the presence of BuLi, was selectively hydrogenated in the presence of Et3Al and Ni octoate. The selectively hydrogenated rubber was cured using quinone dioxime, N-chlorosuccinimide, and ZnO without heating and aged at 50° at 3 h to give a solid nontacky rubber showing tensile strength 350 psi and elongation 200%.

ST unsatd liq block copolymer rubber; diene copolymer rubber selective hydrogenation; coupling diene copolymer rubber; isoprene block copolymer rubber; butadiene block copolymer rubber; vulcanization quinone dioxime unsatd rubber

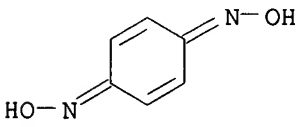
IT Esters, reactions
Lewis bases
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling by, of anionically polymerized conjugated dienes)

IT **Chains**, chemical
(coupling of, of living **conjugated** diene **copolymers**, in block **copolymer** rubber manufacture)

IT Rubber, butadiene, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(liquid, hydrogenation of, selective)

IT Hydrogenation catalysts

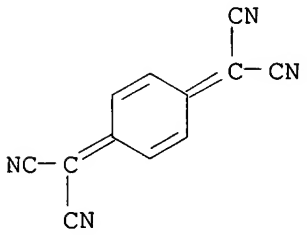
(nickel octoate and triethylaluminum, for conjugated diene block copolymer rubbers)
IT Rubber, synthetic
RL: USES (Uses)
(butadiene-isoprene, random, hydrogenated, manufacture and vulcanization of liquid)
IT Rubber, synthetic
RL: USES (Uses)
(butadiene-isoprene, hydrogenated, block, triblock, manufacture and vulcanization of liquid)
IT Rubber, synthetic
RL: USES (Uses)
(butadiene-isoprene-styrene, block, triblock, hydrogenated, manufacture and vulcanization of liquid)
IT Hydrogenation
(selective, of conjugated diene block copolymer rubbers)
IT 97-93-8, Triethylaluminum, uses 4995-91-9, Nickel (II) octoate
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for selective hydrogenation of conjugated diene block copolymer rubbers)
IT 124-38-9, Carbon dioxide, reactions 7553-56-2, Iodine, reactions 10026-04-7, Silicon tetrachloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling by, of anionically polymerized conjugated dienes)
IT 1333-74-0
RL: USES (Uses)
(hydrogenation, selective, of conjugated diene block copolymer rubbers)
IT 25102-52-7DP, Butadiene-isoprene random copolymer, hydrogenated 109264-12-2DP, Butadiene-isoprene triblock copolymer, hydrogenated 110389-01-0DP, Butadiene-isoprene-styrene triblock copolymer, hydrogenated
RL: PREP (Preparation)
(manufacture and vulcanization of liquid)
IT 9003-17-2
RL: USES (Uses)
(rubber, liquid, hydrogenation of, selective)
IT **105-11-3**, Quinone dioxime
RL: USES (Uses)
(vulcanizing agents, for hydrogenated conjugated diene block copolymer rubbers)
IT **105-11-3**, Quinone dioxime
RL: USES (Uses)
(vulcanizing agents, for hydrogenated conjugated diene block copolymer rubbers)
RN 105-11-3 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione, dioxime (9CI) (CA INDEX NAME)



L92 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1979:72483 HCAPLUS
DN 90:72483
ED Entered STN: 12 May 1984
TI Polymerization of acetylene derivatives. Anion-radical salts of TCNQ with

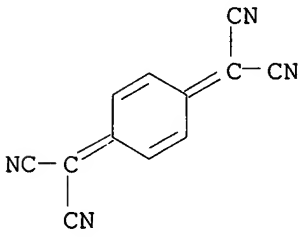
poly(vinyl- and ethynylpyridines)
AU Simionescu, Cristofor I.; Dumitrescu, Svetlana; Percec, Virgil; Diaconu, Ilie
CS Rom.
SO Materiale Plastice (Bucharest, Romania) (1978), 15(2), 69-74
CODEN: MPLAAM; ISSN: 0025-5289
DT Journal
LA Romanian
CC 35-3 (Synthetic High Polymers)
AB The synthesis, structure, and elec. properties of anion-radical TCNQ salt-like complexes of vinylpyridine and ethynylpyridine polymers are reported. The complexes were prepared by quaternizing isotactic (I) and atactic 2-vinylpyridine (II) homopolymers, atactic 3-vinylpyridine homopolymer, and 2- or 3-ethynylpyridine homopolymer with MeI or EtI, mixing the quaternized polymers with Li TCNQ or TCNQ in MeCN, and refluxing 30 min to precipitate the complexes. Complexes from I polymer have better elec. conductivity than those from II polymer; the elec. conductivity varies inversely with the size of the alkyl groups, and is independent of the number of quaternized N groups of the polymer. **Conjugated** bonds in the **polymer chain** significantly affect the conductivity, but not unidirectionally.
ST TCNQ charge transfer complex; vinylpyridine polymer quaternary salt; ethynylpyridine polymer quaternary salt; radical anion TCNQ complex; elec cond charge transfer complex; tacticity charge transfer complex
IT Electric conductivity and conduction
(of ethynyl- and vinylpyridine polymer alkyl iodide salt TCNQ complexes)
IT Charge-transfer complexes
RL: USES (Uses)
(of vinyl and ethynylpyridine polymer alkyl iodide salts with TCNQ, elec. conductivity of)
IT Double bond
Tacticity
(of vinylpyridine polymer alkyl iodide salt-TCNQ complexes, elec. conductivity in relation to)
IT Radical ions
(anions, ethynyl- and vinylpyridine polymer alkyl iodide salt-TCNQ complexes, elec. conductivity of)
IT Quaternary ammonium compounds, properties
(ethynylpyridine polymer alkyl iodide salt-TCNQ complexes, structure and elec. conductivity of)
IT Polyelectrolytes
(quaternary ammonium compds., radical anion TCNQ complexes, elec. conductivity of)
IT Quaternary ammonium compounds, properties
(vinylpyridine polymer alkyl iodide salt-TCNQ complexes, structure and elec. conductivity of)
IT 30607-89-7P 30773-17-2P 68564-26-1P 69253-95-8P 69253-96-9P 69253-97-0P 69253-98-1P 69253-99-2P 69255-58-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and complexation of, with TCNQ)
IT 25014-15-7P 27555-43-7P 28501-18-0P 30306-21-9P 30306-23-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and quaternization of)
IT 55088-77-2P 55993-60-7P 69253-69-6P 69253-72-1P 69253-75-4P

69253-78-7P 69253-81-2P 69254-00-8P 69255-55-6P 69255-57-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and structure and elec. conductivity of)
IT 74-88-4, reactions 75-03-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(quaternization by, of ethynyl- and vinylpyridine polymers)
IT **1283-90-5 1518-16-7**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with ethynyl- and vinylpyridine polymer alkyl iodide salts)
IT **1283-90-5 1518-16-7**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with ethynyl- and vinylpyridine polymer alkyl iodide salts)
RN 1283-90-5 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis-, radical ion(1-), lithium (9CI) (CA INDEX NAME)



● Li^+

RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



L92 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1964:61300 HCAPLUS
DN 60:61300
OREF 60:10800e-h,10801a-c
ED Entered STN: 22 Apr 2001
TI **Polymers** with a **conjugated** bond system in the macromolecular **chains** XXXVII. Synthesis of polymers with charged hetero atoms in the macromolecular chain (onium polymerization)
AU Berlin, A. A.; Zherebtsova, L. V.; Razvodovskii, E. F.

CS Inst. Chem.-Phys., Acad. Sci. U.S.S.R., Moscow
SO Vysokomolekulyarnye Soedineniya (1964), 6(1), 58-63
CODEN: VMSDA8; ISSN: 0042-9368
DT Journal
LA Unavailable
CC 45 (Synthetic High Polymers)

AB cf. CA 56, 2562e; 60, 667h; Wibaut and Broekman, CA 54, 3416d. "Onium" type polymerizations are for 4-chloropyridine (I) and 4-bromopyridine (II) and copolymerization of 4,4'-bipyridyl with 1,4-dibromobutane. While I and II polymerized easily, 2-chloro-, 2-bromo-, 3-chloro-, and 3-bromopyridines did not polymerize. Direct polymerizations of I and II in sealed glass tubes at 10-4 mm. were carried out at 0-210°, and the mol. weight of the polymers obtained was determined by analyzing for terminal Cl after removal of monomer residue in vacuo (3-5 hrs. at 1 mm.). Mol. wts. of poly-4-chloropyridines obtained at 0, 20, 50, 100, 165, an 210° were 400, 440, 460, 1360, 4360, and 1450, resp. The electron paramagnetic resonance (e.p.m.) signal values and electro-conductivity were also determined Mol. wts. of II polymers obtained at 0, 100, and 150° were 1130, 1600, and 1920, resp. Polymerization of I in solution was carried out in glass tubes for 6 hrs. at 100°. The solvent and the monomer were stripped at 100° and 1 mm. The ultraviolet spectra were obtained 20-30 min. after preparing aqueous solns. The appearance of a yellow color in the I precedes polymerization. In an acid-free medium, the color appears after 3-4 days at 20°, 3-4 hrs. at 50°, or 5-7 min. at 100°, and the colored solution of I polymerizes in 2-3 weeks at 0-2°. The colorless I under these conditions does not change in 2-3 months. An ionic stepwise mechanism of I polymerization is presented. The reaction rate increases in the presence of AlCl3 or FeCl3 catalysts, which eliminate the induction period noticeable in the absence of catalysts. Addition of small amts. of chloranil or dibromobutane also increases the reaction rate. II polymerized more readily than I, and crystalline II polymerized at -1 to -2°. The solid-state polymerization was accelerated by preliminary ultraviolet treatment of crystals. Addns. of 0.5-1.0% KI also catalyze I polymerization, the monomer darkening and the reaction rate being increased. The formation of 4-iodopyridine is suggested. The I polymers obtained at 0, 20, and 50° and that decomposed at 210° were partially soluble in MeOH, EtOH, and HCONMe2, while the polymers obtained at 100 and 165° were insol. All the polymers were completely soluble in H2O and in HCl, those obtained at 165° with swelling. On dissolving in H2SO4, HCl was evolved. The ultraviolet spectra of aqueous solns. are displaced towards longer wavelengths with the increasing length of the I polymer chain, and the mol. coefficient of absorption is increased. In the infrared spectra, all I polymers have a common spectrum at 1700-700 cm.-1, intensive absorption of the C:NC bond in the 1632-1614 cm.-1 range, and an oscillation band of the pyridine ring at 1512-1490 cm.-1 An 807 cm.-1 band characteristic of p-substituted derivs. of aromatic compds. was also noticed. The infrared spectrum of poly(pyridinium chloride) obtained from II at 100° was the same as that of poly-I obtained at 100°, although the spectra of I and II are different. Expts. on polymerizing I in solution indicated that the reaction does not take place in hydrocarbons. In toluene, the polymer was formed only on the tube walls. In solvents with high dielec. constant, the reaction took place but the mol. weight of the polymers obtained (500-800) showed that the chains were broken by solvents. I polymer products, on prolonged storage in air or wet with H2O and then vacuum dried, lost their e.p.r. signals. The copolymers of 4,4'-bipyridyl and 1,4-dibromobutane were obtained in blocks and in the toluene solution These were in form of

yellow powders, completely soluble in H2O and containing ionic Br. No e.p.r. signals were detected, indicating conjugation cleavage.

IT Condensation, chemical
(amide polymers by, of nitrophthalio acid derivs. with 1,6-hexanediamine and 4,4'-isopropylidenediphenol, interfacial)

IT Catalysts and Catalysis
(in polymerization, of pyridine derivs. with onium polymer formation, AlCl3, FeCl3, etc., as)

IT Magnetic resonance absorption
Spectra, infrared
(of 1,3,5-triethynylbenzene polymers)

IT Polymerization
(of pyridine derivs., onium structure formation in)

IT Conductivity, electric and(or) Conduction, electric
Magnetic resonance absorption
Spectra, infrared
Spectra, visible and ultraviolet
(of pyridinium compound polymers)

IT Conjugation
(polymers with, with charged hetero atoms in chain and onium structure)

IT Polymers
(with conjugated bonds, with charged hetero atoms in chain and onium structure)

IT Pyridinium, 1-[(piperidinocarbonyl)methyl]-, homopolymer
(by onium polymerization of pyridine derivs.)

IT Pyridinium, 4-halo-
(salts, polymers)

IT 7446-70-0, Aluminum chloride 7705-08-0, Iron chloride, FeCl3
(catalysts in polymerization, of pyridine derivs. with onium polymer formation)

IT **118-75-2**, p-Benzoquinone, tetrachloro- 7681-11-0, Potassium iodide
(catalysts, in polymerization of pyridine derivs. with onium polymer formation)

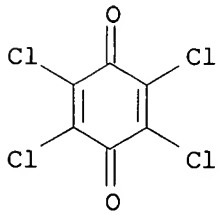
IT 110-86-1, Pyridine
(derivs., onium polymerization of, pyridinium compound polymers from)

IT 463-79-6, Carbonic acid
(polyesters)

IT **118-75-2**, p-Benzoquinone, tetrachloro-
(catalysts, in polymerization of pyridine derivs. with onium polymer formation)

RN 118-75-2 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)



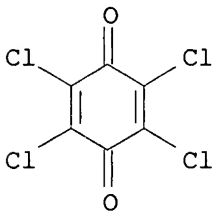
L92 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1964:53094 HCAPLUS

DN 60:53094

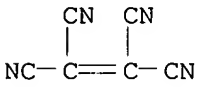
OREF 60:9376a-c
ED Entered STN: 22 Apr 2001
TI Mass-spectrometric investigation of radiolysis of some polymers with conjugated bonds
AU Vasil'ev, G. K.; Tal'roze, V. L.
SO Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (1963), (12), 2124-31
CODEN: IASKA6; ISSN: 0002-3353
DT Journal
LA Unavailable
CC 45 (Synthetic High Polymers)
AB A highly sensitive mass-spectrometric apparatus and procedure for the determination of the composition and kinetics of the yield of gases by radiolysis of organic systems, up to 0.002-0.001 mole/100 e.v., are described. The method was applied to products of the reaction of chloranil with polyethylene, polypropylene, and poly(vinyl alc.), chloranil with polyacrylonitrile at .apprx.200°, and to Aniline Black hydrochloride and base, prepared by oxidizing aniline with a bichromate. Radiolysis yielded H, CO2, and sometimes HCN. A connection was found between the yield of H and the activation energy of the electrocond. Thermolysis data indicate that the O in CO2 is chemical bonded in the polymers. A study of the radiolysis yield of CO2 shows that the effect of energy transfer to extraneous C-containing groups is negligible. The stability to radiation may be used as a measure of the "quality" of **conjugation** in the **polymer chains**.
IT Mass spectrometers
(for radiolysis products of conjugated polymers)
IT Gases
(formation or evolution of, from polymers by radiation, determination of)
IT Activation energy, Heat of activation
(of elec. conduction, of conjugated polymers, H formation by irradiation in relation to)
IT Reaction kinetics and(or) Velocity
(of polymer (conjugated) decomposition by irradiation)
IT Mass spectroscopy
(of polymer (conjugated) radiolysis products)
IT Conductivity, electric and(or) Conduction, electric
(of polymers (conjugated), activation energy of, H formation by irradiation in relation to)
IT Bonds
(oxygen, between CO2 and irradiated conjugated polymers)
IT Radiation and Radiation effects
(polymers (conjugated) treated by, mass spectroscopy of decomposition products of)
IT Conjugation
(polymers with, radiolysis products of, mass spectroscopy of)
IT Polymers
(with conjugated bonds, radiolysis products of, mass spectroscopy of)
IT 7782-44-7, Oxygen
(bonds of, between CO2 and irradiated conjugated polymers)
IT 25014-41-9, Acrylonitrile, homopolymer
(elec. charge prevention on, reaction products of, with chloranil, conjugated, radiolysis products of)
IT 74-90-8, Hydrocyanic acid
(formation of, from conjugated polymers by irradiation)
IT 124-38-9, Carbon dioxide
(formation of, from polymers conjugated by radiation)
IT 1333-74-0, Hydrogen
(formation or evolution of, from conjugated polymers by irradiation)

IT 9003-07-0, Propene polymers
(reaction product with chloranil, conjugated, radiolysis products of)
IT **118-75-2**, p-Benzoquinone, tetrachloro-
(reaction product with polymers, conjugated, radiolysis products of)
IT 9002-88-4, Ethylene polymers 9002-89-5, Vinyl alcohol polymers
(reaction products with chloranil, conjugated, radiolysis products of)
IT **118-75-2**, p-Benzoquinone, tetrachloro-
(reaction product with polymers, conjugated, radiolysis products of)
RN 118-75-2 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)



L92 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1963:409368 HCAPLUS
DN 59:9368
OREF 59:1766d-f
ED Entered STN: 22 Apr 2001
TI Polymers with conjugated bonds and with heteroatoms in the **conjugated chains**. XXI. **Polymer** complexes of tetracyano-ethylene
AU Berlin, A. A.; Matveeva, N. G.; Sherle, A. I.; Kostrova, N. D.
SO Vysokomolekulyarnye Soedineniya (1962), 4, 860-8
CODEN: VMSDA8; ISSN: 0042-9368
DT Journal
LA Unavailable
CC 45 (Synthetic High Polymers)
AB cf. CA 58, 11475h. C2(CN)2, obtained from Br2C(CN)2, reacts with the acetylacetonates of Cu, Fe, and Mg at 160°-80° in evacuated ampuls and forms polymer-metal complexes which are black powders, soluble in HCONMe2, pyridine, triethanolamine, and concentrated H2SO4. They are thermostable up to 400°-50°, partially crystalline, semiconductive, and possess enhanced magnetic susceptibility. The infrared spectrum shows no bands at 700-1200 cm.-1 but a C.tplbond.N peak at 2210 cm.-1 that disappears on heating. These polymers can be produced in form of a thin film on metallic surfaces by heating the metals with C2(CN)2 in evacuated ampuls at 150°-450° for 5-20 hrs. These films are chemical bonded to the metal and have an excellent durability. They are not affected by organic solvents, acids, or alkalies. These polychelates have branched chains and it may be assumed that they form ring structures similar to phthalocyanines.
IT Coating(s)
(from tetracyanoethylene metal complex polymers)
IT Magnetic properties
(of azophenylferrocene polymers)
IT Magnetic susceptibility
Molecular structure
Spectra, infrared
(of tetracyanoethylene metal complex polymers)

IT **Conjugation**
(**polymers** with, with heteroatoms in **conjugated chain**)
IT Semiconductors, electric
(tetracyanoethylene metal complex polymers)
IT **Polymers**
(with **conjugated** bonds and heteroatoms in **chain**)
IT Magnesium compounds, homopolymer
IT 7440-50-8, Copper
(compds., polymers (coordination))
IT 123-54-6, 2,4-Pentanedione
(metal complexes, polymers with ethenetetracarbonitrile)
IT 7439-89-6, Iron
(polymeric complexes)
IT **670-54-2**, Ethenetetracarbonitrile
(with 2,4-pentanedione metal complexes)
IT **670-54-2**, Ethenetetracarbonitrile
(with 2,4-pentanedione metal complexes)
RN 670-54-2 HCAPLUS
CN Ethenetetracarbonitrile (6CI, 8CI, 9CI) (CA INDEX NAME)



L92 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1962:484067 HCAPLUS
DN 57:84067
OREF 57:16852b-f
ED Entered STN: 22 Apr 2001
TI Polymers with a conjugated double bond system and with hetero atoms in the conjugated chain. XXII. Products of the reaction between disazo compounds and quinones
AU Parini, V. P.; Kazakova, Z. S.; Okorokova, M. N.; Berlin, A. A.
SO Vysokomolekulyarnye Soedineniya (1962), 4, 510-15
CODEN: VMSDA8; ISSN: 0042-9368
DT Journal
LA Unavailable
CC 47 (Plastics)
GI For diagram(s), see printed CA Issue.
AB cf. CA 57, 16620e. Polymers of the proposed general formula I where A is the corresponding aromatic group, were obtained by reaction of p-benzoquinone with disazo compds. prepared from p-phenylenediamine, benzidine, and benzidine-3,3'-dicarboxylic acid (II). To a solution of 5.43 g. p-phenylenediamine-di-HCl in 100 ml. of concentrated H_2SO_4 at 0°, a solution of 4.55 g. $NaNO_2$ in 18 ml. concentrated H_2SO_4 was added. The solution obtained was dropped with stirring (0°) during 3 hrs. into a mixture of 42.5 g. H_3PO_4 with 7.5 g. H_2O, the mixture was stirred another 0.5 hr., and, after addition of 1 g. of urea, was poured onto ice. The solution obtained was filtered and added at 0° to a suspension of 3.24 g. p-benzoquinone in 20 ml. 50% EtOH. After 12 hrs., the precipitate was filtered off, boiled with 5% HCl, washed with boiling H_2O, and dried. A black powder was obtained. One part (0.57 g.) of it was insol.; another (1.88 g.) soluble in acetone. The preparation of polymers from benzidine di-HCl and from II was carried out either with neutralization of HCl by NaOAc or

without neutralization. These polymers contain 5-15 rings/mol. The N content depends on the pH of the reaction mixture It can be decreased by using ≤0.5% NaOAc. The polymers have electron-exchange properties and give a narrow electron paramagnetic resonance signal with an integral intensity of 10-18 to 1020 of paramagnetic particles/g. Some of them lose ≤3% of their weight at 300°, having elec. conds. of .apprx.10-10 ohm-cm. at room temperature, and react with heavy-metal salts with the probable formation of cross-linked chelate structures.

IT Chemical compounds
(chelate, from **polymers** with hetero atoms in **conjugated chain**)

IT Azo compounds
(diazo, reaction products with quinones, with hetero atoms in **conjugated chain** of **polymer**)

IT Electron exchangers
(from p-benzoquinone polymers with disazo compds.)

IT Conductivity, electric and(or) Conduction, electric
Magnetic resonance absorption
(of p-benzoquinone polymers with disazo compds.)

IT Quinones
(reaction products with disazo compds., with hetero atoms in **conjugated chain** of **polymer**)

IT **Polymers**
(with hetero atoms in **conjugated chain**)

IT 106-50-3, p-Phenylenediamine 2130-56-5, 3,3'-Biphenyldicarboxylic acid, 4,4'-diamino-
(diazo derivs., reaction with benzoquinone, and **polymers** with hetero atoms in **conjugated chain** thereby)

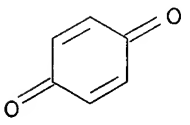
IT 92-87-5, Benzidine
(diazotied erythrocytes treated with, reaction with benzoquinone, and **polymers** with hetero atoms in **conjugated chain** thereby)

IT **106-51-4**, p-Benzoquinone
(reaction products with disazo compds.)

IT **106-51-4**, p-Benzoquinone
(reaction products with disazo compds.)

RN 106-51-4 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



L92 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1961:147482 HCAPLUS

DN 55:147482

OREF 55:27956i,27957a

ED Entered STN: 22 Apr 2001

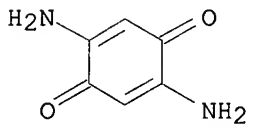
TI **Polymers** with **conjugated** bonds and heteroatoms in the **chain**. XII. Preparation and properties of certain polyaminoquinones

AU Parini, V. P.; Kazakova, Z. S.; Okorokova, M. N.; Berlin, A. A.

SO Vysokomolekulyarnye Soedineniya (1960), 2, 402-7
CODEN: VMSDA8; ISSN: 0042-9368

DT Journal

LA Unavailable
CC 31 (Synthetic Resins and Plastics)
AB Polyaminoquinones of the formula [- NHC: CH.C-(:O).C(NHR-):CH.C(:O)]n, where R is (CH2)6, C6H4, C12H8, C12H6(CO2H)2, were synthesized by the interaction of p-benzoquinone with hexamethylenediamine, p-phenylenediamine, benzidine, and 3,3'-carboxybenzidine (I). The compds. are nonfusible, possess electron-exchange properties, and give intense electron resonance signals. The polymers obtained from aromatic diamines are thermally stable. The polymer prepared from I was characterized by somewhat enhanced electrocond. (10-10 ohm-1 cm.-1). On interaction with Cu salts in solution, it yields an insol. salt, which may be a cross-linked, chelate polymer.
IT Quinones
(amino, polymers of, preparation of)
IT Conductivity, electric and(or) Conduction, electric
(of para-benzoquinone polymers with 2,3'-dicarboxybenzidine)
IT 183748-02-9, Electron
(exchange or transfer of, by polyaminoquinones)
IT **1521-06-8**, p-Benzoquinone, 2,5-diamino-
(polymer derivs.)
IT 7440-50-8, Copper
(salts, reactions with p-benzoquinone-3,3'-dicarboxybenzidine polymers)
IT **1521-06-8**, p-Benzoquinone, 2,5-diamino-
(polymer derivs.)
RN 1521-06-8 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione, 2,5-diamino- (9CI) (CA INDEX NAME)



L92 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1961:68428 HCAPLUS
DN 55:68428
OREF 55:12977b-e
ED Entered STN: 22 Apr 2001
TI Electrical conductivity of polymers with conjugated double bonds
AU Balabanov, E. I.; Berlin, A. A.; Parini, V. P.; Tal'roze, V. L.; Frankevich, E. L.; Cherkashin, M. I.
SO Doklady Akademii Nauk SSSR (1960), 134, 1123-6
CODEN: DANKAS; ISSN: 0002-3264
DT Journal
LA Unavailable
CC 2 (General and Physical Chemistry)
GI For diagram(s), see printed CA Issue.
AB cf. CA 54, 16900a, 17954a, 25948f; 55, 6907f. A large number of **polymers** with **conjugation** extending through an acyclic **chain** or through linked benzene rings were prepared and their elec. properties studied. Elec. conductivity increases with temperature in accord with the expression, $\sigma = \sigma 0 e^{-E/kT}$, where $\sigma 0$ and E are substance-dependent consts. whose values vary greatly, not only from one polymer to another, but for differently prepared samples of the same polymer. E.g., for (PhC:CH)n (I) tablet pressed at 200° E = 15.4

kcal./mole, σ0 = 2.10 + 10-4 ohm-1 cm.-1; film from solvent E = 49.5 kcal./mole, σ0 = 4.10 + 1018. Values for E vary from 4.6 kcal./mole for [-C6H4N:C.CH:CH.C(:N-).CH:CH]n to 49.5 kcal./mole for I to 92 kcal./mole for a complex of acenaphthene with chloranil (II). Values for σ0 vary from 10-12 ohm-1 cm.-1 for Cl(C6H4)nCl to 6.4 + 1051 for II. Despite this great variation the actual values for σ at 27° vary only from 10-6 to 10-20.

IT Activation energy
(Heat of activation, of elec. conduction, of polymers with conjugated double bonds)

IT Double bonds
(conjugated, polymers with, elec. conductivity of)

IT Polymers
(elec. conductivity of)

IT Conjugation
(in polymers, elec. conductivity of)

IT Frequency factor
(of elec. conductivity, of polymers with conjugated double bonds)

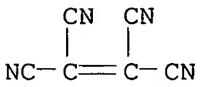
IT Conductivity, electric and(or) Conduction, electric
Electric properties
(of polymers, with conjugated double bonds)

IT Ferrocene, 1,1',2,2'-tetrasalicyl-
Iron, bis[bis(4-carboxy-3-hydroxyphenyl)cyclopentadienyl]-
Salicylic acid, 4,4'-(cyclopentadienylene)di-, iron derivative
(and polymers of Be and Fe complexes, elec. conductivity of)

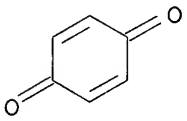
IT Benzidine, polymers with p-benzoquinone and 2,5-dichloro-p-benzoquinone
(and their Cu complexes, elec. conductivity of)

IT 1,6-Hexanediamine, polymer with p-benzoquinone
3,3'-Biphenyldicarboxylic acid, 4,4'-diamino-, polymers with p-benzoquinone
3,3'-Biphenyldicarboxylic acid, 4,4'-dichloro-, polymers with 4,4''-azo-bis[4'-chloro-3,3'-biphenyldicarboxylic acid]
3,3'-Biphenyldicarboxylic acid, 4,4''-azobis[4'-chloro-, polymers with 4,4'-dichloro-3,3'-biphenyldicarboxylic acid
3,3'-Biphenyldicarboxylic acid, 4-(p-benzoquinonylazo)-, polymers with 4-(p-benzoquinonyl)-3,3'-biphenyldicarboxylic acid
3,3'-Biphenyldicarboxylic acid, 4-p-benzoquinonyl-, polymers with 4-(p-benzoquinonylazo)-3,3'-biphenyldicarboxylic acid
Acenaphthene, compds. with chloranil
Azobenzene, 4,4'-bis(p-chlorophenyl)-, polymers with 4,4'-dichlorobiphenyl
Benzene, ethynyl-, polymers of, with p-diethynylbenzene and with 1-hexyne
Benzene, p-dichloro-, polymers of
Benzene, p-diethynyl-, polymers with ethynylbenzene
Beryllium compounds, with 4,4'-(cyclopentadienylene)disalicylic acid Fe derivative
Biphenyl, 4,4'-dichloro-, polymers with 4,4'-bis(p-chlorophenyl)azobenzene
Chloranil, compds. with acenaphthene
Copper, compounds, with benzidine-p-benzoquinone polymers and with ethenetetracarbonitrile
Indoaniline, homopolymer
Iron, compound with 4,4'-(cyclopentadienylene)disalicylic acid Fe derivative
Iron, compound with ethenetetracarbonitrile
Pyridone, polymers with p-benzoquinone and p-phenylenediamine
Triazene, 1-(4-biphenylyl)-, polymers of
m,m'-Bitolyl, 4,4'-dichloro-, polymers with 4,4'-bis(4-chloro-m-tolyl)-o,o'-azotoluene
o,o'-Azotoluene, 4,4'-bis(4-chloro-m-tolyl)-, polymers with 4,4'-dichloro-m,m'-bitolyl
p-Benzoquinone, (4-biphenylyl)-, polymers with (4-biphenylylazo)-p-

benzoquinone
p-Benzoquinone, (4-biphenylylazo)-, polymers with (4-biphenylyl)-p-benzoquinone
p-Benzoquinone, 2,5-dichloro-, polymers with benzidine
p-Phenylenediamine, polymer with p-benzoquinone
p-Phenylenediamine, polymer with p-benzoquinone and pyridone
(elec. conductivity of)
IT 25038-69-1, Benzene, ethynyl-, homopolymer 186350-46-9, 1-Hexyne, polymer with ethynylbenzene
(elec. conductivity of)
IT **670-54-2**, Ethenetetracarbonitrile
(polymers of Cu and Fe complexes, elec. conductivity of)
IT **106-51-4**, p-Benzoquinone
(polymers with diamines, and their Cu complexes, elec. conductivity of)
IT **670-54-2**, Ethenetetracarbonitrile
(polymers of Cu and Fe complexes, elec. conductivity of)
RN 670-54-2 HCAPLUS
CN Ethenetetracarbonitrile (6CI, 8CI, 9CI) (CA INDEX NAME)



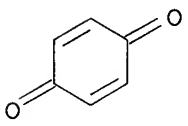
IT **106-51-4**, p-Benzoquinone
(polymers with diamines, and their Cu complexes, elec. conductivity of)
RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



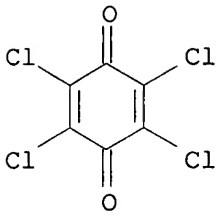
L92 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1960:135850 HCAPLUS
DN 54:135850
OREF 54:25948b-e
ED Entered STN: 22 Apr 2001
TI **Polymers** with **conjugated** bonds in the macromolecular **chains**. IV. Some properties of **polymers** with heterogeneous atoms in the **conjugated chains**
AU Blyumenfel'd, L. A.; Berlin, A. A.; Matveeva, N. G.; Kalmanson, A. E.
SO Vysokomolekulyarnye Soedineniya (1959), 1, 1647-51
CODEN: VMSDA8; ISSN: 0042-9368
DT Journal
LA Unavailable
CC 31 (Synthetic Resins and Plastics)
AB cf. CA 54, 16899i. Polyaminoquinone (I) samples obtained from chloranil and benzidine give a narrow electronic paramagnetic resonance (e.p.r.) signal, the distance between the points of maximum slope being 8 oe. and the g-factor of the free electron being devoid of superfine structure. This bears evidence of the presence of unpaired electrons, the concentration of which is 1017-1018/g. With sufficient degree of polymerization of I, the

intensive broad asymmetric e.p.r. lines are observed, indicating greater quantity of unpaired electrons (concentration 1020-10-21/g.) and the presence of intrinsic internal anisotropic fields in the system. When the temperature is lowered to 80°K. the e.p.r. spectrum suddenly disappears. This is similar to the e.p.r. spectra of paramagnetic substances of the Cr2O3 type with antiferromagnetic properties. Possibly the emanation of unpaired electrons is not associated with the presence of conjugated bonds in the system but with an ordered system of polar groups. The metal complex (Cu 8-15%) of I and Cu(OAc)2 gives an e.p.r. spectrum practically the same as that of I, only differing in increased intensity of the signal and strong absorption in the zero field. The effect of introducing metal ions in I on the changes in the spectrum is attributed to addnl. structure formation through the coordination bonds of the metal atom and not to the presence of unpaired electrons in the metal ion.

IT Polymers
Polymers
IT Double bonds
Double bonds
(**conjugated**, in **polymer** macromol. **chains**)
IT Magnetic resonance absorption
(of aminoquinone polymers from benzidine and chloranil)
IT 74-86-2, Acetylene
(aryl derivs., polymerization of, and properties of polymers)
IT 7440-50-8, Copper
(compounds, with polymeric amino derivs. of p-benzoquinone)
IT **106-51-4**, p-Benzoquinone
(polymeric amino derivs., and Cu complexes)
IT **118-75-2**, Chloranil
(reaction products with benzidine, magnetic resonance absorption and unpaired electrons in)
IT 92-87-5, Benzidine
(reaction products with chloranil, magnetic properties and unpaired electrons in)
IT 183748-02-9, Electron
(unpaired, in polyaminoquinone from benzidine and chloranil)
IT **106-51-4**, p-Benzoquinone
(polymeric amino derivs., and Cu complexes)
RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)

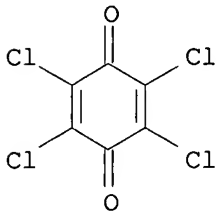


IT **118-75-2**, Chloranil
(reaction products with benzidine, magnetic resonance absorption and unpaired electrons in)
RN 118-75-2 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)

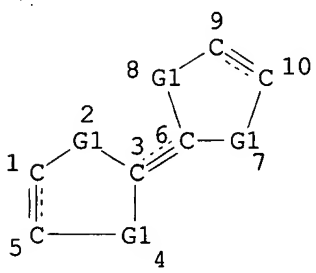


L92 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1960:89082 HCAPLUS
DN 54:89082
OREF 54:16899i,16900a-b
ED Entered STN: 22 Apr 2001
TI **Polymers** with **conjugated** bonds in the macromolecular **chains**. III. On polyaminoquinones
AU Berlin, A. A.; Matveeva, N. G.
SO Vysokomolekulyarnye Soedineniya (1959), 1, 1643-6
CODEN: VMSDA8; ISSN: 0042-9368
DT Journal
LA Unavailable
CC 31 (Synthetic Resins and Plastics)
AB cf. CA 53, 7092b. For the syntheses of the new polymer the reaction between quinone and different organic compds. containing NH2 groups are used. From all syntheses, the best results were obtained with 1 mole p,p'-diaminobiphenyl and 1 mole tetrachloroquinone dissolved in EtOH and boiled 8 hrs. in 2 moles NaOAc. The yield was 94.1%. The new resin, named polyaminoquinone, contained C 66.2, H 5.47, N 7.73, and Cl 1.27%. It is black, insol. in most solvents and soluble in concentrated H2SO4. Its mol. weight is about 2000. Two Cl atoms in the monomer can be easily substituted; this gives virtually unlimited possibilities of polymer conversions. It can also form polymer complexes with metal salts. Aromatic polyaminoquinones and their complexes possess paramagnetic properties (χ = 1.28 + 10-6). It exhibits narrow and broad lines in the infrared spectra, bearing evidence of the presence of unpaired electrons.
IT Polymers
IT Plastic materials and Resinous products
(from chloranil condensation products with benzidine)
IT **Conjugation**
(in **polymers**, in macromol. **chain**)
IT Infrared spectra
Magnetism
(of benzidine-chloranil condensation products)
IT Quinones
(reaction products with amines)
IT Amines
(reaction product, with quinones)
IT **118-75-2**, Chloranil
(reaction products with benzidine, and magnetic properties, metal-salt complexes and spectra thereof)
IT 92-87-5, Benzidine
(reaction products with chloranil, magnetic properties and unpaired electrons in)
IT **118-75-2**, Chloranil
(reaction products with benzidine, and magnetic properties, metal-salt

complexes and spectra thereof)
RN 118-75-2 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)



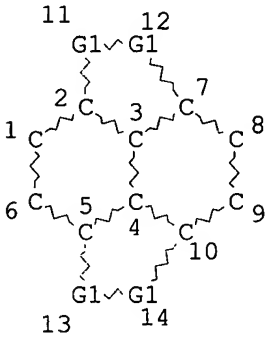
=> => d que l104
L2 3 SEA FILE=REGISTRY ABB=ON (1518-16-7/BI OR 25233-30-1/BI OR 31366-25-3/BI)
L4 64659 SEA FILE=REGISTRY ABB=ON 46.150.9/RID
L5 4093 SEA FILE=REGISTRY ABB=ON L4 AND 1/NR AND 2/O
L11 24589 SEA FILE=REGISTRY ABB=ON 591.49.52/RID
L12 5505 SEA FILE=REGISTRY ABB=ON L11 AND 2/O
L13 1892 SEA FILE=REGISTRY ABB=ON L12 AND 2/NR
L16 350 SEA FILE=REGISTRY ABB=ON L4 AND CYANO AND 1/NR
L17 259 SEA FILE=REGISTRY ABB=ON L16 AND 2-4/N
L21 81850 SEA FILE=REGISTRY ABB=ON 1839.6.36/RID
L22 5957 SEA FILE=REGISTRY ABB=ON L21 AND 3/NR AND (1/O OR 2/N)
L23 84 SEA FILE=REGISTRY ABB=ON L22 AND DICYANO
L24 44 SEA FILE=REGISTRY ABB=ON L22 AND DINITRIL?
L25 121 SEA FILE=REGISTRY ABB=ON L23 OR L24
L27 134 SEA FILE=REGISTRY ABB=ON L22 AND 1/O AND OXO
L28 253 SEA FILE=REGISTRY ABB=ON L25 OR L27
L31 3910 SEA FILE=REGISTRY ABB=ON 16.145.6/RID
L32 79933 SEA FILE=REGISTRY ABB=ON (DINITRIL? OR DICYANO?)
L33 210 SEA FILE=REGISTRY ABB=ON L31 AND L32
L34 STR



VAR G1=S/SE/TE
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
L36 SCR 1839
L38 SCR 2022
L39 SCR 1935 AND 2019
L40 SCR 1926 AND 2019
L42 SCR 2127
L44 SCR 1842
L46 SCR 134 OR 1773
L48 3373 SEA FILE=REGISTRY SSS FUL L34 AND L36 AND (L38 OR L39 OR L40) AND L46 NOT (L42 OR L44)
L52 167 SEA FILE=REGISTRY ABB=ON 591.49.33/RID
L53 77 SEA FILE=REGISTRY ABB=ON L52 AND (DICYANO? OR DINITRIL?)
L56 28 SEA FILE=REGISTRY ABB=ON 2508.17.32/RID
L57 15 SEA FILE=REGISTRY ABB=ON L56 AND 4/N
L58 13 SEA FILE=REGISTRY ABB=ON L57 AND (DINITRIL? OR DICYAN?)
L61 STR



VAR G1=S/SE/TE
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE
L63 666 SEA FILE=REGISTRY SSS FUL L61
L66 2542 SEA FILE=REGISTRY ABB=ON 46.160.3/RID
L67 199 SEA FILE=REGISTRY ABB=ON L66 AND 2/NR AND (2/S OR (1/S AND (1/TE OR 1/SE)))
L71 7 SEA FILE=REGISTRY ABB=ON L66 AND 2/NR AND (2/TE OR (1/TE AND (1/S OR 1/SE)))
L74 363 SEA FILE=REGISTRY ABB=ON 46.162.2/RID
L75 55 SEA FILE=REGISTRY ABB=ON L74 AND 2/NR AND (2/SE OR (1/SE AND (1/S OR 1/TE)))
L76 7 SEA FILE=REGISTRY ABB=ON C6N4/MF
L77 8 SEA FILE=REGISTRY ABB=ON C10N6/MF
L78 10 SEA FILE=REGISTRY ABB=ON (L76 OR L77) NOT 1-20/NR
L79 24096 SEA FILE=HCAPLUS ABB=ON L5
L80 12745 SEA FILE=HCAPLUS ABB=ON L13
L81 5026 SEA FILE=HCAPLUS ABB=ON L17
L82 381 SEA FILE=HCAPLUS ABB=ON L28
L83 85 SEA FILE=HCAPLUS ABB=ON L53 OR L58
L84 3342 SEA FILE=HCAPLUS ABB=ON L78
L85 74 SEA FILE=HCAPLUS ABB=ON L33

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L87           555 SEA FILE=HCAPLUS ABB=ON  L63
L88           116 SEA FILE=HCAPLUS ABB=ON  L67 OR L71 OR L75
L89         43572 SEA FILE=HCAPLUS ABB=ON  (L79 OR L80 OR L81 OR L82 OR L83 OR
                  L84 OR L85 OR L86 OR L87 OR L88)
L92            21 SEA FILE=HCAPLUS ABB=ON  L89 AND (RESIN# OR ?POLYMER?)(6A)?CONJ
                  UGAT?(5A)?CHAIN?
L99             1 SEA FILE=REGISTRY ABB=ON  L2 AND PMS/CI
L100        11318 SEA FILE=HCAPLUS ABB=ON  L99 OR POLYANILINE OR EMERALDIN?
L101          157 SEA FILE=HCAPLUS ABB=ON  L89 AND L100
L102           18 SEA FILE=HCAPLUS ABB=ON  L101 AND CONJUGAT?
L103           19 SEA FILE=HCAPLUS ABB=ON  L101 AND ?CHAIN?
L104           32 SEA FILE=HCAPLUS ABB=ON  (L92 OR L102 OR L103) NOT L92
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Compounds and specific polymer — polyaniline

```
=> d l104 1-32 all hitstr

L104 ANSWER 1 OF 32  HCAPLUS  COPYRIGHT 2004 ACS on STN
AN   2004:162290  HCAPLUS
DN   140:202432
ED   Entered STN:  29 Feb 2004
TI   Biobased microbattery
IN   Stanish, Ivan; Singh, Alok
PA   USA
SO   U.S. Pat. Appl. Publ., 15 pp., Cont.-in-part of U.S. Ser. No. 939,288.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  H01M004-60
     ICS  H01M004-66
NCL  429213000; 429245000
CC   52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
     Section cross-reference(s): 9, 63
FAN.CNT 2
     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
PI   US 2004038128      A1   20040226       US 2003-644558   20030819
     US 2003039885      A1   20030227       US 2001-939288   20010824
     US 6680142         B2   20040120
PRAI US 2001-939288     A2   20010824
AB   A galvanic cell has a cathode, an anode, and an electrolyte.  The cathode
     and anode each have vesicles, an electroactive species encapsulated into
     the vesicles, a conducting substrate, and functionalized tethers
     immobilizing the vesicles to the substrates.  The electrolyte is in
     contact with both conducting substrates.  At least some of the vesicles
     contain benzoquinone and/or hydroquinone.
ST   microbattery biobased; battery micro biobased
IT   Battery cathodes
     Biological materials
     Chelating agents
     Electron acceptors
     Electron donors
     Liposomes
     Potentiometers
     Primary batteries
        (biobased microbattery)
IT   Phospholipids, uses
     RL: DEV (Device component use); USES (Uses)
        (biobased microbattery)
```

IT Carotenes, processes
Viologens
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(caroviologens, electron mediator; biobased microbattery)

IT Polyenes
RL: TEM (Technical or engineered material use); USES (Uses)
(**conjugated**, tether; biobased microbattery)

IT Ubiquinones
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(electron mediator; biobased microbattery)

IT Polyenes
RL: TEM (Technical or engineered material use); USES (Uses)
(nonconjugated, tether; biobased microbattery)

IT Alloys, uses
Metals, uses
Polyanilines
Polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(substrate; biobased microbattery)

IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); USES (Uses)
(surfactant; biobased microbattery)

IT Polyacetylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(tether; biobased microbattery)

IT Amphiphiles
(vesicle-forming; biobased microbattery)

IT 3436-44-0, Didecanoyl phosphatidylcholine 76078-28-9 84271-00-1 503269-46-3 651712-29-7
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(biobased microbattery)

IT 50-81-7, Ascorbic acid, uses 83-88-5, Riboflavin, uses **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, uses 123-31-9, Hydroquinone, uses 1309-37-1, Ferric oxide, uses 7439-96-5D, Manganese, chelates 13408-62-3, Ferricyanide 13408-63-4, Ferrocyanide 13943-58-3, Potassium ferrocyanide 20074-52-6D, Iron(3+), chelates, uses
RL: DEV (Device component use); USES (Uses)
(biobased microbattery)

IT 1405-97-6, Gramicidin 11054-70-9, Lasalocid 17090-79-8, Monensin 28380-24-7, Nigericin 52665-69-7, Calcimycin 56092-81-0, Ionomycin
RL: MOA (Modifier or additive use); USES (Uses)
(cationic carrier; biobased microbattery)

IT 60-00-4, Edta, processes 126-44-3, Citrate, processes 11070-68-1, Glutamate, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(chelating agent; biobased microbattery)

IT 84-65-1, Anthraquinone 102-54-5, Ferrocene
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(electron mediator; biobased microbattery)

IT 12001-79-5, Vitamin K
RL: MOA (Modifier or additive use); USES (Uses)
(electron mediator; biobased microbattery)

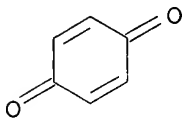
IT 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-16-6,

Rhodium, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses
7440-57-5, Gold, uses **25233-30-1, Polyaniline**
30604-81-0, Polypyrrole 50926-11-9, Ito
RL: TEM (Technical or engineered material use); USES (Uses)
(substrate; biobased microbattery)

IT 25038-69-1, Polyphenylacetylene 25067-58-7, Polyacetylene
RL: TEM (Technical or engineered material use); USES (Uses)
(tether; biobased microbattery)

IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, uses
RL: DEV (Device component use); USES (Uses)
(biobased microbattery)

RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)

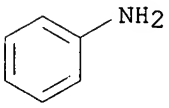


IT **25233-30-1, Polyaniline**
RL: TEM (Technical or engineered material use); USES (Uses)
(substrate; biobased microbattery)

RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N

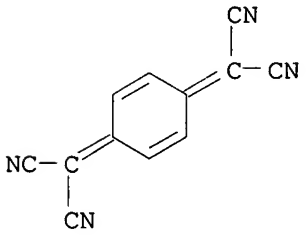


L104 ANSWER 2 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:154672 HCAPLUS
DN 140:207229
ED Entered STN: 26 Feb 2004
TI Material for organic electroluminescent device and organic electroluminescent device
IN Seo, Satoshi; Yamazaki, Hiroko
PA Semiconductor Energy Laboratory Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 31 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-14
ICS C08K005-08; C08K005-315; C08K005-46; C08L101-00; H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
FAN.CNT 1

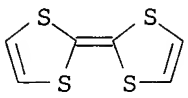
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

applicant

PI JP 2004063363 A2 20040226 JP 2002-222451 20020731
CN 1483784 A 20040324 CN 2003-127778 20030729
PRAI JP 2002-222451 A 20020731
OS MARPAT 140:207229
AB The invention relates to an organic electroluminescent device comprising a buffer layer and an electroluminescent layer sandwiched between a pair of electrodes, wherein the buffer layer is composed of an organic solvent-compatible **conjugated** polymer, such as **emeraldine** base **polyaniline** (EB-PANI) and a organic solvent-compatible electron-acceptor or donor mol., typically tetracyanoquinodimethane and tetrathiafulvalene, resp., for reducing the operational voltage.
ST org electroluminescent device **emeraldine** base **polyaniline** acceptor donor
IT Conducting polymers
Electroluminescent devices
(material for organic electroluminescent device)
IT Polyanilines
RL: DEV (Device component use); USES (Uses)
(material for organic electroluminescent device)
IT **1518-16-7**, TCNQ
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(acceptor; material for organic electroluminescent device)
IT **31366-25-3**, Tetrathiafulvalene
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(donor; material for organic electroluminescent device)
IT **25233-30-1**, **Polyaniline**
RL: DEV (Device component use); USES (Uses)
(material for organic electroluminescent device)
IT **1518-16-7**, TCNQ
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(acceptor; material for organic electroluminescent device)
RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



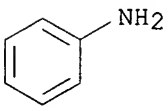
IT **31366-25-3**, Tetrathiafulvalene
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(donor; material for organic electroluminescent device)
RN 31366-25-3 HCAPLUS
CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



IT **25233-30-1, Polyaniline**
RL: DEV (Device component use); USES (Uses)
(material for organic electroluminescent device)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L104 ANSWER 3 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:591240 HCAPLUS
DN 139:142025
ED Entered STN: 01 Aug 2003
TI Doping **conjugated** polymers with electron acceptors
IN Zaidi, Naveed; Giblin, Sean; Terry, Ian; Monkman, Andrew
PA The University of Durham, UK
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C08G073-02
ICS H01B001-12
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 77
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003062305	A1	20030731	WO 2003-GB254	20030124

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI GB 2002-1593 A 20020124
AB In a preferred embodiment, the **conjugated** polymer is **polyaniline** and the electron acceptor is tetracyanoquinodimethane (TCNQ). The material is preferably ferromagnetic at room temperature (290K)

and, most preferably, is ferromagnetic at temps. above room temperature

ST electron acceptor doped **conjugated** polymer ferromagnet; TCNQ doped **polyaniline** ferromagnet

IT Conducting polymers
Dopants
Doping
Electric conductors
Electron donors
Ferromagnetic materials
(doping **conjugated** polymers with electron acceptors to manufacture ferromagnets)

IT Poly(arylenealkenylenes)
Polyamines
Polyanilines
Polyphenyls
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(doping **conjugated** polymers with electron acceptors to manufacture ferromagnets)

IT **84-58-2**, DDQ **670-54-2**, TCNE, uses **1518-16-7**, TCNQ **6251-01-0**, TNAP
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(doping **conjugated** polymers with electron acceptors to manufacture ferromagnets)

IT 25013-01-8, Polypyridine 25190-62-9, Poly-p-phenylene **25233-30-1**, **Polyaniline** 25233-34-5, Polythiophene 30604-81-0, Polypyrrole 95270-88-5, Polyfluorene 96638-49-2, Polyphenylene-vinylene
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(doping **conjugated** polymers with electron acceptors to manufacture ferromagnets)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

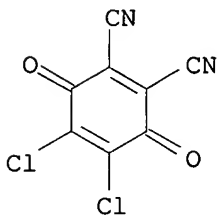
(1) Nippon Soda Co; JP 05287088 A 1993 HCAPLUS

(2) Ricoh Kk; JP 05047211 A 1993 HCAPLUS

IT **84-58-2**, DDQ **670-54-2**, TCNE, uses **1518-16-7**, TCNQ **6251-01-0**, TNAP
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(doping **conjugated** polymers with electron acceptors to manufacture ferromagnets)

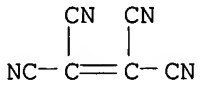
RN 84-58-2 HCAPLUS

CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI, 9CI) (CA INDEX NAME)

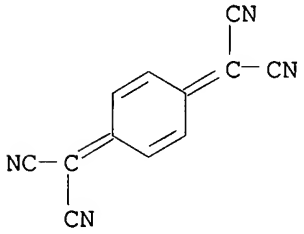


RN 670-54-2 HCAPLUS

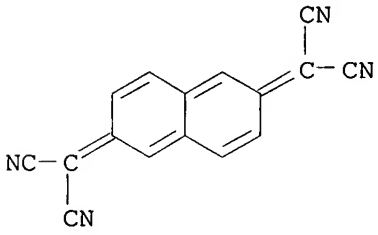
CN Ethenetetracarbonitrile (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



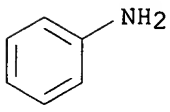
RN 6251-01-0 HCAPLUS
CN Propanedinitrile, 2,2'-(2,6-naphthalenediylidene)bis- (9CI) (CA INDEX NAME)



IT **25233-30-1, Polyaniline**
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(doping **conjugated** polymers with electron acceptors to manufacture ferromagnets)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L104 ANSWER 4 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:491535 HCAPLUS
DN 139:61319
ED Entered STN: 27 Jun 2003
TI Organic NTC thermistor materials and devices and manufacturing thereof
IN Kawaguchi, Toshiyuki; Takahashi, Masayuki
PA Shin-Etsu Polymer Co., Ltd., Japan
SO PCT Int. Appl., 23 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM H01C007-04
ICS C08G061-12; C08L065-00; C08L101-00
CC 76-3 (Electric Phenomena)
Section cross-reference(s): 38
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003052777	A1	20030626	WO 2002-JP13089	20021213

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI JP 2001-381849 A 20011214
AB An organic NTC material is obtained by mixing 1 weight-part **conjugated** organic semiconductor polymer with either ≥2 weight-parts thermoplastic or thermosetting resin. The **conjugated** organic semiconductor polymer is preferably selected from solvent-soluble **polyaniline**, polythiophene, polypyrrole, and their derivs. Therefore, an organic NTC device is obtainable at low temperature without expensive composite rare earth/transition oxides.
ST **conjugated** org semiconductor polymer neg temp coeff thermistor; **polyaniline conjugated** semiconductor polymer neg temp coeff thermistor; polythiophene **conjugated** semiconductor polymer neg temp coeff thermistor; polypyrrole **conjugated** semiconductor polymer neg temp coeff thermistor
IT Polyamides, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(binder; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)
IT Semiconductor materials
(**conjugated** organic polymer; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)
IT Thermistors
(neg.-temperature-coefficient; organic NTC thermistor semiconductor materials and
devices and manufacturing thereof)
IT Plastics, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(thermoplastics; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)
IT Plastics, properties

RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(thermosetting; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)

IT 25068-38-6, Epikote 1001 27027-40-3, Acrylonitrile-butyl methacrylate copolymer
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(binder; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)

IT 100424-56-4, Poly(methyl 3-methyl-4-pyrrole carboxylate) 110864-38-5, Poly(3-phenylaniline) 126213-51-2, Polyethylenedioxythiophene 129933-82-0, Poly(butyl 3-methyl-4-pyrrole carboxylate)
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**conjugated** semiconductor material; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)

IT 168679-01-4, Adeka EH 335
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(curing agent; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)

IT **1518-16-7**, Tetracyanoquinodimethane
RL: MOA (Modifier or additive use); USES (Uses)
(dopant; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)

IT 104-15-4, p-Toluenesulfonic acid, uses 115-86-6, Triphenylphosphate 64535-52-0
RL: MOA (Modifier or additive use); USES (Uses)
(organic NTC thermistor semiconductor materials and devices and manufacturing thereof)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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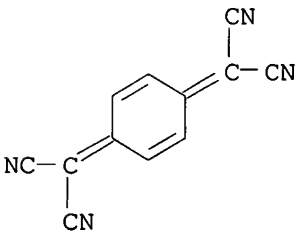
(2) Kurabe Industrial Co Ltd; JP 03-255923 A 1991
(3) Mitsubishi Electric Corp; JP 61-145808 A 1986
(4) Nok Kabushiki Kaisha; JP 06-45105 A 1994 HCAPLUS
(5) Tdk Corp; JP 05-267008 A 1993
(6) Tokyo Shibaura Electric Co Ltd; JP 59-43502 A 1984

IT **1518-16-7**, Tetracyanoquinodimethane
RL: MOA (Modifier or additive use); USES (Uses)
(dopant; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)

RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



L104 ANSWER 5 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:640558 HCAPLUS

DN 137:370431
ED Entered STN: 25 Aug 2002
TI Palladium-catalyzed synthesis of oligo(methylthio)aniline and conversion to polyacene-type electrolytes bearing phenothiazinium repeating units
AU Oyaizu, Kenichi; Mitsuhashi, Fumio; Tsuchida, Eishun
CS Advanced Research Institute for Science and Engineering, Waseda University, Tokyo, 169-8555, Japan
SO Macromolecular Chemistry and Physics (2002), 203(10/11), 1328-1336
CODEN: MCHPES; ISSN: 1022-1352
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 76
AB The synthetic routes to ladder polymers which consist of benzene-tetrayl subunits with imino and methylsulfonio linkages are described. As the key intermediate, oligo- and **polyaniline** derivs. having pendant methylthio groups were prepared by the Pd-catalyzed aryl amination from various monomers. The oxidation of the polymers with H2O2 in the presence of CH3COOH effects conversion of methylthio to methylsulfinyl groups in high yield without formation of undesired methylsulfonyl groups. The superacid-induced condensation of the polymers under dilution conditions induced the polymer-analogous intramol. electrophilic ring closure reaction of the hydroxy(methyl)(phenyl)sulfonium cation onto the adjacent benzene ring to yield the ladder polymers. The ladder polymers are semiconductors with intrinsic elec. conductivity of ca. 10-5 S·cm-1.
ST ladder phenothiazinium polyacene prepn ring closure superacid induced condensation; palladium catalyst amination **polyaniline** methylthio group; oxidn **polyaniline** methylthio methylsulfinyl group ladder polymer; elec cond **polyaniline** phenothiazinium semiconductor ladder polymer
IT NMR (nuclear magnetic resonance)
(C-13 CP/MAS; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
IT Methylation
(N-methylation; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
IT Condensation reaction
(Swern condensation; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
IT Ladder polymers
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(aromatic, phenothiazinium containing; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
IT Polymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**conjugated**, phenothiazinium-based, ladder; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
IT Polymerization
(cyclopolymn.; preparation of monomers and Pd-catalyzed polymerization of

oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT Polyanilines
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(methylthio-containing; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT Demethylation
(nucleophilic; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT Conducting polymers
(phenothiazinium-based; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT Polyphenyls
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(phenothiazinium-based; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT Acetylation
Amination
Bromination
Cyclocondensation reaction
Electric conductivity
Oxidation
Polyelectrolytes
Semiconductor materials
Thermal stability
(preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT Polyacenes
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 51364-51-3, Tris(dibenzylideneacetone)dipalladium
RL: CAT (Catalyst use); USES (Uses)
(amination polymerization catalyst; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 98327-87-8, BINAP
RL: CAT (Catalyst use); USES (Uses)
(catalyst ligand; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 1493-13-6, Triflic acid
RL: CAT (Catalyst use); USES (Uses)
(condensation polymerization catalyst; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT **1518-16-7**
RL: RGT (Reagent); RACT (Reactant or reagent)
(demethylation reagent; preparation of monomers and Pd-catalyzed polymerization of
oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
IT 140-50-1P, N,N'-Diacetyl-1,4-phenylenediamine 699-20-7P, 1,4-Bis(methylthio)benzene 6310-41-4P, N-Acetyl-2-(methylthio)aniline 91799-47-2P, N-Acetyl-N-methyl-2-(methylthio)aniline 475089-03-3P, N-Acetyl-N-methyl-3-bromo-6-(methylthio)aniline 475089-08-8P, N-Acetyl-4-bromo-2-(methylthio)aniline
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
IT 475089-10-2DP, methylsulfinyl derivs. and cyclized polymers and demethylated polymers 475089-11-3DP, methylsulfinyl derivs. and cyclized polymers and demethylated polymers
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(ladder polymer; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
IT 475089-07-7P, 4-Bromo-2-(methylthio)aniline
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer and intermediate; preparation of monomers and Pd-catalyzed polymerization
of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
IT 3010-30-8P, N,N'-Diethyl-1,4-phenylenediamine 84910-84-9P, 2,5-Dibromo-1,4-bis(methylthio)benzene 475089-04-4P, N-Methyl-3-bromo-6-(methylthio)aniline 475089-09-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
IT 475089-05-5P, Poly(methylimino-6-methylthio-1,3-phenylene) 475089-06-6P, N-Methyl-3-bromo-6-(methylthio)aniline homopolymer 475089-10-2P, 2,5-Dibromo-1,4-bis(methylthio)benzene-N,N'-Diethyl-1,4-phenylenediamine copolymer 475089-11-3P, 2,5-Dibromo-1,4-bis(methylthio)benzene-N,N'-Diethyl-1,4-phenylenediamine copolymer, SRU 475089-12-4P, N-Ethyl-4-bromo-2-(methylthio)aniline homopolymer 475089-13-5P, Poly(ethylimino-2-methylthio-1,4-phenylene) 475089-14-6P, 4-Bromo-2-(methylthio)aniline homopolymer 475089-15-7P, Poly(imino-2-methylthio-1,4-phenylene)
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(oligomer; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
IT 7722-84-1, Hydrogen peroxide, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(oxidative polymerization reagent; preparation of monomers and Pd-catalyzed polymerization
of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
IT 865-48-5

RL: CAT (Catalyst use); USES (Uses)
(polymerization initiator; preparation of monomers and Pd-catalyzed polymerization of
oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 67-68-5, DMSO, reactions 74-88-4, Methyl iodide, reactions 75-36-5, Acetyl chloride 100-68-5, Thioanisole 106-50-3, 1,4-Phenylenediamine, reactions 108-24-7, Acetic anhydride 2987-53-3, 2-(Methylthio)aniline 7726-95-6, Bromine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 475089-16-8P 475089-17-9P 475089-18-0P 475089-19-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 16853-85-3
RL: RGT (Reagent); RACT (Reactant or reagent)
(reducing reagent; preparation of monomers and Pd-catalyzed polymerization of
oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Cadogan, J; Synthesis 1969, V1, P11 HCAPLUS
(2) Haryono, A; Macromolecules 1999, V32, P3146 HCAPLUS
(3) Haryono, A; Macromolecules 1999, V32, P3146 HCAPLUS
(4) Kanbara, T; Chem Lett 1997, P1185 HCAPLUS
(5) Kanbara, T; Polym J (Tokyo) 1998, V30, P66 HCAPLUS
(6) Kistenmacher, A; Synth Met 1993, V55-57, P2034
(7) Lober, O; J Am Chem Soc 2001, V123, P4366 MEDLINE
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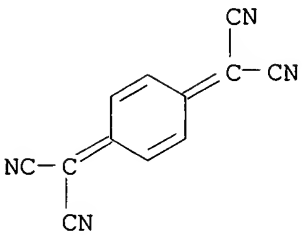
(9) Miyatake, K; Macromolecules 2001, V34, P2385 HCAPLUS
(10) Sadighi, J; J Am Chem Soc 1998, V120, P4960 HCAPLUS
(11) Singer, R; J Am Chem Soc 1998, V120, P213 HCAPLUS
(12) Svanholm, U; J Am Chem Soc 1975, V97, P101 HCAPLUS
(13) Tsuchida, E; Bioinorganic Catalysis, 2nd edition 1999, P535 HCAPLUS
(14) Wolfe, J; J Am Chem Soc 1996, V118, P7215 HCAPLUS

IT **1518-16-7**
RL: RGT (Reagent); RACT (Reactant or reagent)
(demethylation reagent; preparation of monomers and Pd-catalyzed polymerization of
oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

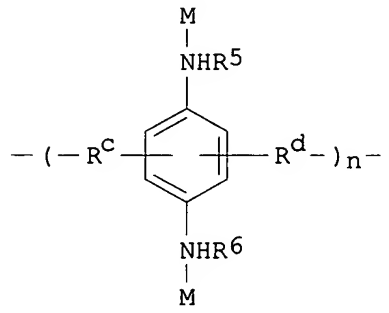
RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



L104 ANSWER 6 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:479992 HCAPLUS
DN 137:49370
ED Entered STN: 26 Jun 2002
TI Electrically responding phenylazomethine complex or polymer complex for secondary battery and redox catalyst
IN Yamamoto, Kimitoshi; Higuchi, Masayoshi; Saikai, Toyohiko; Takagi, Kumiko
PA Foundation for Scientific Technology Promotion, Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07C251-24
ICS B01J031-22; C07C211-56; C07C321-30; C07F001-02; C07F005-00; C07F007-22; C08G061-02; H01M004-60; C08G073-02; H01M004-02; H01M010-40
CC 49-7 (Industrial Inorganic Chemicals)
Section cross-reference(s): 35, 52, 67
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2002179635	A2	20020626	JP 2000-380981	20001214
PRAI JP 2000-380981		20001214		

OS MARPAT 137:49370
GI



I

AB Elec. responding phenylazomethine complexes MRN:C(R1)ArC(R2):NRaM (Ar = aromatic π **conjugated** substituent; R1 and R2 = H or (substituted) hydrocarbyl; R and Ra = alkyl or aromatic; M = rare earth or halogenated metal) are claimed. Alternatively, elec. responding polyphenylazomethine complexes [MN:C(R3)ArC(R4):N(M)Rb]n (Ar = aromatic π **conjugated** substituent; R3 and R4 = H or (substituted)

hydrocarbyl; Rb = hydrocarbylene; M = rare earth or halogenated metal; n ≥1 integer) are claimed. Alternatively, elec. responding polyphenylenediamine complexes I (R5 and R6 = H or (substituted) hydrocarbyl; Rc and Rd = (substituted) hydrocarbylene; M = rare earth or halogenated metal; n ≥1 integer) are claimed. Alternatively, elec. responding **polyaniline** complexes containing **polyaniline** coordinated with a rare earth ion or a halogenated metal are claimed. Cathode materials using the above complexes are also claimed. Redox catalysts using the above complexes are also claimed. The cathode materials provide long service life and rapid response and the redox catalysts provide multielectron transfer with good thermal stability.

ST phenylazomethine complex elec responding cathode battery; polyphenylazomethine complex elec responding redox catalyst; polyphenylenediamine metal halide complex elec responding; **polyaniline** rare earth complex elec responding

IT Polyazomethines
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(complexes; elec. responding polyphenylazomethine complex for secondary battery and redox catalyst)

IT Battery cathodes
Redox reaction catalysts
(elec. responding phenylazomethine complex or polymer complex for secondary battery and redox catalyst)

IT Polythiophenylenes
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(elec. responding polyphenylenediamine complex for secondary battery and redox catalyst)

IT Polyanilines
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(lanthanum complex; elec. responding **polyaniline** complex for secondary battery and redox catalyst)

IT 7439-91-0DP, Lanthanum, **polyaniline** complex **25233-30-1DP**, **Polyaniline**, lanthanum complex
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(elec. responding **polyaniline** complex for secondary battery and redox catalyst)

IT 117897-79-7P 325963-57-3P 409318-68-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and polymerization of; in preparation of elec. responding polyphenylenediamine complex)

IT 438626-78-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of; in preparation of elec. responding phenylazomethine complex)

IT 325963-56-2P 409318-72-5P 438626-80-3P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of; in preparation of elec. responding polyphenylenediamine complex)

IT 7439-91-0DP, Lanthanum, complex with bis[(α-phenyl)phenylazomethine]benzene 7447-41-8DP, Lithium chloride, complex with bis[(α-phenyl)phenylazomethine]benzene 7772-99-8DP, Tin(II)

chloride, complex with bis[(α-phenyl)phenylazomethine]benzene
438626-78-9DP, complex with rare earth or halogenated metal
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of; elec. responding phenylazomethine complex for secondary battery and redox catalyst)

IT 7440-53-1DP, Europium, complex with polyphenylenediamine 409318-72-5DP, europium complex 438626-80-3DP, europium complex
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of; elec. responding polyphenylenediamine complex for secondary battery and redox catalyst)

IT 51124-99-3P 438626-79-0P
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of; in preparation of elec. responding polyphenylazomethine complex)

IT 325963-58-4P 325963-59-5P 501954-22-9P
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of; in preparation of elec. responding polyphenylenediamine complex)

IT 3016-97-5, 1,4-Dibenzoylbenzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with aniline; in preparation of elec. responding phenylazomethine complex)

IT **1633-14-3**, 2,5-Dibromo-1,4-benzoquinone
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with aniline; in preparation of elec. responding polyphenylenediamine complex)

IT 62-53-3, Aniline, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dibenzoylbenzene; in preparation of elec. responding phenylazomethine complex)

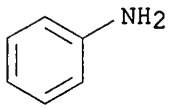
IT 74-31-7, N,N'-Diphenyl-1,4-phenylenediamine 92-86-4, 4,4'-Dibromobiphenyl 19362-77-7, 4,4'-Thiobisbenzenethiol
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of; in preparation of elec. responding polyphenylenediamine complex)

IT **25233-30-1DP**, **Polyaniline**, lanthanum complex
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(elec. responding **polyaniline** complex for secondary battery and redox catalyst)

RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

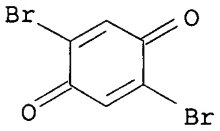
CM 1

CRN 62-53-3
CMF C6 H7 N



IT **1633-14-3**, 2,5-Dibromo-1,4-benzoquinone
RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with aniline; in preparation of elec. responding polyphenylenediamine complex)
RN 1633-14-3 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione, 2,5-dibromo- (9CI) (CA INDEX NAME)



L104 ANSWER 7 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:219616 HCAPLUS
DN 137:63569
ED Entered STN: 22 Mar 2002
TI A new functionalized conductive polymer poly(2-methyl-5-amino-1,4-naphthoquinone) (PMANQ) with two distinct redox systems
AU Hubert, S.; Pham, M. C.; Dao, Le H.; Piro, B.; Nguyen, Q. A.; Hedayatullah, M.
CS ITODYS, UMR CNRS 7086, Universite Paris 7-Denis Diderot, Paris, 75005, Fr.
SO Synthetic Metals (2002), 128(1), 67-81
CODEN: SYMEDZ; ISSN: 0379-6779
PB Elsevier Science B.V.
DT Journal
LA English
CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 72, 76
AB The electrochem. oxidation of 2-methyl-5-amino-1,4-naphthoquinone (MANQ) on platinum or glassy carbon (GC) electrodes in acetonitrile was used to prepare poly(2-methyl-5-amino-1,4-naphthoquinone) (PMANQ) as films. The films were characterized by UV-VIS, XPS, ex situ FT-IR, and in situ multiple internal reflection FT-IR spectroscopies (MIRFT-IRS). The polymer structure is similar to that of **polyaniline**, bearing one methylquinone group per monomer unit. The redox potential and electrochem. cycling of PMANQ films in organic and aqueous media were studied by MIRFT-IRS and in situ d.c. conductivity The conductivity depends on the oxidation level of the π- **conjugated chain**; on oxidation, maximum conductivity σ = 0.6 S-cm-1, was observed at about +0.6 V. At higher potentials, the conductivity falls down, due to the transition from the polaronic form (very conducting) to the bipolaronic form (less conducting). The polymer presents two sep. redox systems, the hydroquinone/quinone and the Ar-NH **chain** which are both stable. The quinone group exchanges cations for the charge-compensating process.
ST methylamino naphthoquinone monomer prepn electrooxidative polymn redox activity; redox system mol polymethylamino naphthoquinone conducting polymer; cond oxidn level **conjugated chain** polymethylamino naphthoquinone
IT Polymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**conjugated**; preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)

IT Redox reaction
(electrochem., hydroquinone/quinone; preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
IT Polymerization
(electrochem., oxidative; preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
IT Polyanilines
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(methyl-amino-naphthoquinone; preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
IT Electric conductivity
(potential dependence; preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer
with dual internal redox system)
IT FMO (molecular orbital)
Mannich reaction
Polaron
Redox potential
UV and visible spectra
(preparation and redox electrochem. and polaron state dependence of conductivity of
poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
IT 116415-32-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer
with dual internal redox system)
IT **116415-35-1P**, 2-Methyl-5-amino-1,4-naphthoquinone
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
IT **439152-09-7P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and redox electrochem. and polaron state dependence of conductivity of
poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
IT 50-00-0, Formaldehyde, reactions 83-55-6, 5-Amino-1-naphthol 110-91-8, Morpholine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and redox electrochem. and polaron state dependence of conductivity of
poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
IT 116415-34-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and redox electrochem. and polaron state dependence of conductivity of
poly(Me-amino-naphthoquinone) conducting polymer with dual internal

redox system)
RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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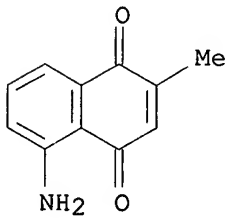
IT **116415-35-1P**, 2-Methyl-5-amino-1,4-naphthoquinone
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
RN 116415-35-1 HCAPLUS
CN 1,4-Naphthalenedione, 5-amino-2-methyl- (9CI) (CA INDEX NAME)

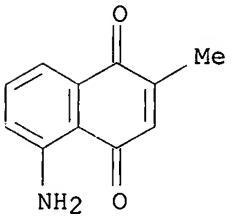


IT **439152-09-7P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal

redox system)
RN 439152-09-7 HCAPLUS
CN 1,4-Naphthalenedione, 5-amino-2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 116415-35-1
CMF C11 H9 N O2



L104 ANSWER 8 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:170908 HCAPLUS
DN 137:47461
ED Entered STN: 08 Mar 2002
TI **Conjugated** systems composed of transition metals and redox-active π- **conjugated** ligands
AU Hirao, Toshikazu
CS Department of Applied Chemistry, Osaka University, Faculty of Engineering, Osaka, Suita, Yamada-oka, 565-0871, Japan
SO Coordination Chemistry Reviews (2002), 226(1-2), 81-91
CODEN: CCHRAM; ISSN: 0010-8545
PB Elsevier Science B.V.
DT Journal; General Review
LA English
CC 35-0 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 78
AB A review. Combinations of transition metals and π- **conjugated** mols. or polymers as redox-active ligands as hybrid **conjugated** complexes are described. A variety of structural designs are possible based on the coordination number and geometry, affording an efficient multi-redox system. **Conjugated** complexes with p-quinone, p-quinonediimine, and **polyaniline** derivs. to give bimetallic, metallocyclic, and polymeric complexes are discussed. Complexes with polyanilines used in catalytic oxidation, e.g., Wacker oxidation, in which the π- **conjugated** polymers serve as a redox-active ligand are also described.
ST review **conjugated** polymer transition metal complex structure redox; quinone quinonediimine transition metal redox complex review; **polyaniline** transition metal redox complex oxidn catalyst review; Wacker oxidn **conjugated** polymer redox active ligand review
IT Oxidation catalysts
(Wacker reaction; structure of transition metal/redox-active π- **conjugated** ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)
IT Polymers, properties
RL: PRP (Properties)
(**conjugated**; structure of transition metal/redox-active π-

conjugated ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)

IT Coordination number
Redox reaction
(structure of transition metal/redox-active π- **conjugated** ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)

IT Ligands
Transition metal complexes
Transition metals, properties
RL: PRP (Properties)
(structure of transition metal/redox-active π- **conjugated** ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)

IT Polyanilines
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(transition metal complexes, Wacker oxidation catalysts; structure of transition metal/redox-active π- **conjugated** ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)

IT **106-51-4D**, p-Quinone, transition metal complexes 4377-73-5D, p-Quinonediimine, transition metal complexes
RL: PRP (Properties)
(structure of transition metal/redox-active π- **conjugated** ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)

IT **25233-30-1, Polyaniline**
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(transition metal complexes, Wacker oxidation catalysts; structure of transition metal/redox-active π- **conjugated** ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)

RE.CNT 78 THERE ARE 78 CITED REFERENCES AVAILABLE FOR THIS RECORD

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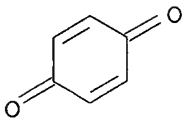
IT **106-51-4D**, p-Quinone, transition metal complexes
RL: PRP (Properties)
(structure of transition metal/redox-active π- **conjugated** ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)

RN 106-51-4 HCAPLUS

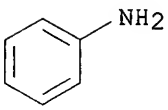
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



IT **25233-30-1, Polyaniline**
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(transition metal complexes, Wacker oxidation catalysts; structure of transition metal/redox-active π- **conjugated** ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L104 ANSWER 9 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:672592 HCAPLUS
DN 135:372111
ED Entered STN: 14 Sep 2001
TI Optically Active **Polyaniline** Derivatives Prepared by Electron Acceptor in Organic System: Chiroptical Properties
AU Su, Shi-Jian; Kuramoto, Noriyuki
CS Graduate Program of Human Sensing and Functional Sensor Engineering, Graduate School of Science and Engineering Yamagata University, Yonezawa Yamagata, 992-8510, Japan
SO Macromolecules (2001), 34(21), 7249-7256
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 76
AB A novel synthetic process was developed to yield optically active **polyaniline** derivs. (PANIs) prepared by electron acceptor, 2,3-dichloro-5,6-dicyanobenzoquinone (DDQ), using either (+)- or (-)-camphorsulfonic acid (CSA) as the chiral inductor in organic media. Either thin films of PANIs/(+)-CSA and PANIs/(-)-CSA or their solns. exhibit mirror-imaged CD (CD) spectra in the visible region, indicating diastereoselection in the electron-transfer polymerization in the presence of chiral inductor. The films were confirmed to remain their chiral configuration during reversible dedoping/redoping cycles in solid state. Unique chiroptical properties of PANIs/(+)- or (-)-CSA dissolved in m-cresol indicate that there exists a solvent effect on the PANIs' **chain** conformations and subsequent chiroptical properties, and the solvent effect is strongly dependent upon the structure of parent monomer and nature of various organic solvents. The PANIs' **chain**

conformation in m-cresol solution forms during the dissoln., and it can be hardly changed by postintroduction of a little amount of another solvent due to the stable interactions among polymer backbone, CSA, and m-cresol for maintaining optical activity. However, PMOA doped with the same one-hand CSA can appear in the inverse CD spectrum when dissolved in cosolvent of m-cresol and DMSO at various volume ratios.

ST chiral induction camphorsulfonic acid aniline electron transfer polymn; anisidine toluidine polymn chiral induction camphorsulfonic acid; conformation CD cond **polyaniline** polyanisidine polytoluidine

IT Polymer **chains**
(conformation; preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)

IT Bipolaron
Circular dichroism
Conducting polymers
Cyclic voltammetry
Doping
Electric conductivity
Solvent effect
(preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)

IT Optically active compounds
Polyanilines
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)

IT Polymerization
(stereoselective; preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)

IT 1336-21-6, Ammonium hydroxide ((NH4)(OH))
RL: NUU (Other use, unclassified); USES (Uses)
(dedoping agent; preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)

IT 7647-01-0, Hydrochloric acid, uses
RL: MOA (Modifier or additive use); USES (Uses)
(dopant; preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)

IT **84-58-2**, 2,3-Dichloro-5,6-dicyanobenzoquinone
RL: NUU (Other use, unclassified); USES (Uses)
(electron acceptor; preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)

IT 3144-16-9, (+)-Camphorsulfonic acid 35963-20-3, (-)-Camphorsulfonic acid
RL: NUU (Other use, unclassified); USES (Uses)
(preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)

IT **25233-30-1P, Polyaniline** 97917-08-3P, Poly(o-toluidine) 99742-70-8P, Poly(o-anisidine)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)

RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD

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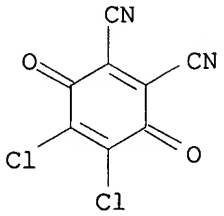
IT **84-58-2**, 2,3-Dichloro-5,6-dicyanobenzoquinone
RL: NUU (Other use, unclassified); USES (Uses)
(electron acceptor; preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)

RN 84-58-2 HCAPLUS

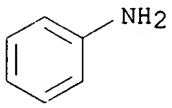
CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI, 9CI) (CA INDEX NAME)



IT **25233-30-1P, Polyaniline**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L104 ANSWER 10 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:618212 HCAPLUS
DN 135:177678
ED Entered STN: 24 Aug 2001
TI Protein and peptide sensors using electrical detection methods
IN Sawyer, Jaymie Robin; Li, Changming; Choong, Vi-En; Maracas, George; Zhang, Peiming
PA Motorola, Inc., USA
SO PCT Int. Appl., 53 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12Q001-68
CC 9-1 (Biochemical Methods)
Section cross-reference(s): 6, 10, 15
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001061053	A2	20010823	WO 2001-US5476	20010220
WO 2001061053	A3	20020314		
WO 2001061053	C2	20021017		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
EP 1257820 A2 20021120 EP 2001-911028 20010220
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
PRAI US 2000-506178 A2 20000217
WO 2001-US5476 W 20010220

AB The present invention provides an apparatus and methods for the elec. detection of mol. interactions between a probe mol. and a protein or peptide target mol., but without requiring the use of electrochem. or other reporters to obtain measurable signals. The methods can be used for elec. detection of mol. interactions between probe mols. bound to defined regions of an array and protein or peptide target mols. which are permitted to interact with the probe mols. Streptavidin-modified porous polyacrylamide hydrogel microelectrodes were prepared Biotinylated polyclonal antibodies to Escherichia coli were immobilized on the microelectrodes and the sensor was used to detect E. coli.

ST protein peptide sensor elec detection mol interaction; microelectrode immobilized antibody E coli detection

IT Voltammetry
(a.c.; protein and peptide sensors using elec. detection methods)

IT Transition metal complexes
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as reporters for labeling target mols.; protein and peptide sensors using elec. detection methods)

IT Ceramics
Printed circuit boards
Textiles
(as support; protein and peptide sensors using elec. detection methods)

IT Glass, uses
Plastics, uses
Rubber, uses
RL: DEV (Device component use); USES (Uses)
(as support; protein and peptide sensors using elec. detection methods)

IT Analytical apparatus
(biochem.; protein and peptide sensors using elec. detection methods)

IT Antibodies
RL: RCT (Reactant); RACT (Reactant or reagent)
(biotinylated, immobilization on streptavidin-modified porous hydrogel microelectrodes; protein and peptide sensors using elec. detection methods)

IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(co-, films, linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)

IT Plastics, uses
RL: DEV (Device component use); USES (Uses)
(conductive; protein and peptide sensors using elec. detection methods)

IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(**conjugated**, films, linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)

IT Films
(copolymer, linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)

IT Electrodes
(counter; protein and peptide sensors using elec. detection methods)

IT Bacteria (Eubacteria)

(detection of viable; protein and peptide sensors using elec. detection methods)

IT Immunoglobulins
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(fragments, immobilized; protein and peptide sensors using elec. detection methods)

IT Sols
(gel linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)

IT Voltammetry
(hydrodynamic modulation; protein and peptide sensors using elec. detection methods)

IT Antiserums
Combinatorial library
Peptide library
Phage display library
(immobilized; protein and peptide sensors using elec. detection methods)

IT Antibodies
Oligonucleotides
Peptides, biological studies
Probes (nucleic acid)
Proteins, specific or class
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(immobilized; protein and peptide sensors using elec. detection methods)

IT Biosensors
(immunosensors; protein and peptide sensors using elec. detection methods)

IT Natural products
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(library, immobilized; protein and peptide sensors using elec. detection methods)

IT Gels
(linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)

IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(metal-containing; protein and peptide sensors using elec. detection methods)

IT Antibodies
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(monoclonal, immobilized; protein and peptide sensors using elec. detection methods)

IT Immobilization, biochemical
(of probe interacting with protein or peptide target; protein and peptide sensors using elec. detection methods)

IT Metals, uses
RL: DEV (Device component use); USES (Uses)
(polymers impregnated with; protein and peptide sensors using elec. detection methods)
IT Hydrogels
(porous, streptavidin-modified; protein and peptide sensors using elec. detection methods)
IT Amperometry
Cyclic voltammetry
Electric conductivity
Electric conductors
Electric current
Electric impedance
Electric insulators
Electric potential
Electrolytes
Escherichia coli
Holders
Microelectrodes
Molecular association
Potentiometry
Reference electrodes
Sensors
Square wave voltammetry
(protein and peptide sensors using elec. detection methods)
IT Peptides, analysis
Proteins, general, analysis
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(protein and peptide sensors using elec. detection methods)
IT Carbides
Nitrides
Oxides (inorganic), uses
RL: DEV (Device component use); USES (Uses)
(protein and peptide sensors using elec. detection methods)
IT Voltammetry
(pulsed; protein and peptide sensors using elec. detection methods)
IT Antibodies
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(single **chain**, Fv fragments, immobilized; protein and peptide sensors using elec. detection methods)
IT 9013-20-1, Streptavidin
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(as linking agent for immobilizing biotinylated probe mols.; protein and peptide sensors using elec. detection methods)
IT 7439-89-6D, Iron, complexes, uses 7439-95-4D, Magnesium, complexes, uses 7440-02-0D, Nickel, complexes, uses 7440-04-2D, Osmium, complexes, uses 7440-18-8D, Ruthenium, complexes, uses 7440-48-4D, Cobalt, complexes, uses 7440-50-8D, Copper, complexes, uses 7440-66-6D, Zinc, complexes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as reporters for labeling target mols.; protein and peptide sensors using elec. detection methods)

IT 7440-21-3, Silicon, uses 12033-89-5, Silicon nitride, uses
RL: DEV (Device component use); USES (Uses)
(as support; protein and peptide sensors using elec. detection methods)
IT 9033-83-4, Polyphenylene 25013-01-8, Polypyridine 25067-54-3, Polyfuran **25233-30-1**, **Polyaniline** 25233-34-5, Polythiophene 30604-81-0, Polypyrrole 51555-21-6, Polycarbazole 82451-55-6, Polyindole 95270-88-5, Polyfluorene 96638-49-2, Poly(phenylenevinylene)
RL: DEV (Device component use); USES (Uses)
(films, linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)
IT 9003-05-8, Polyacrylamide 9004-34-6, Cellulose, uses 9012-36-6, Agarose
RL: DEV (Device component use); USES (Uses)
(gel linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)
IT 25322-68-3, Polyethylene glycol
RL: DEV (Device component use); USES (Uses)
(linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)
IT 109-97-7, Pyrrole
RL: DEV (Device component use); USES (Uses)
(neutral matrix, linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)
IT 57-62-5D, Chlortetracycline, **conjugates** with target mols. 60-54-8D, Tetracycline, **conjugates** with target mols. 65-61-2D, Acridine orange, **conjugates** with target mols. 90-45-9D, 9-Aminoacridine, **conjugates** with target mols. 100-22-1D, N,N,N',N'-Tetramethyl-p-phenylenediamine, **conjugates** with target mols. 102-54-5D, Ferrocene, **conjugates** with target mols. **106-51-4D**, 1,4-Benzoquinone, **conjugates** with target mols. 865-21-4D, Vinblastine, **conjugates** with target mols. 1239-45-8D, Ethidium bromide, **conjugates** with target mols. **1518-16-7D**, Tetracyanoquinodimethane, **conjugates** with target mols. 7059-24-7D, Chromomycin A3, **conjugates** with target mols. 7240-37-1D, 7-Aminoactinomycin D, **conjugates** with target mols. 10118-90-8D, Minocycline, **conjugates** with target mols. 11056-06-7D, Bleomycin, **conjugates** with iron and target mols. 13292-46-1D, Rifampicin, **conjugates** with target mols. 18378-89-7D, Mithramycin A, **conjugates** with target mols. 19052-39-2D, **conjugates** with target mols. 20830-81-3D, Daunomycin, **conjugates** with target mols. 23214-92-8D, Doxorubicin, **conjugates** with target mols. 23491-45-4D, Hoechst 33258, **conjugates** with target mols. 23491-52-3D, Hoechst 33342, **conjugates** with target mols. **31366-25-3D**, Tetrathiafulvalene, **conjugates** with target mols. 57576-44-0D, Aclarubicin, **conjugates** with target mols. 63783-82-4D, Ethidium monoazide, **conjugates** with target mols. 72496-41-4D, Pirarubicin, **conjugates** with target mols. 355395-37-8D, **conjugates** with target mols.
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(protein and peptide sensors using elec. detection methods)
IT 58-85-5D, Biotin, **conjugates** with probe mols., complexes with immobilized streptavidin
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(protein and peptide sensors using elec. detection methods)
IT 7429-90-5, Aluminum, uses 7440-06-4, Platinum, uses 7440-22-4, Silver,

uses 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7782-42-5, Graphite, uses 7783-90-6, Silver chloride, uses
RL: DEV (Device component use); USES (Uses)
(protein and peptide sensors using elec. detection methods)

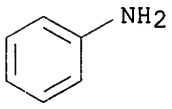
IT 7439-89-6D, Iron, **conjugates** with bleomycin and target mols., reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(protein and peptide sensors using elec. detection methods)

IT **25233-30-1, Polyaniline**
RL: DEV (Device component use); USES (Uses)
(films, linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)

RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

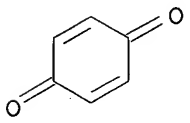
CM 1

CRN 62-53-3
CMF C6 H7 N

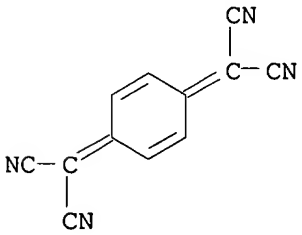


IT **106-51-4D**, 1,4-Benzoquinone, **conjugates** with target mols. **1518-16-7D**, Tetracyanoquinodimethane, **conjugates** with target mols. **31366-25-3D**, Tetrathiafulvalene, **conjugates** with target mols.
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(protein and peptide sensors using elec. detection methods)

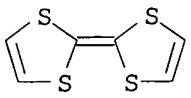
RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



RN 31366-25-3 HCAPLUS
CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



L104 ANSWER 11 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:812546 HCAPLUS
DN 134:42816
ED Entered STN: 20 Nov 2000
TI Growth and characterization of **polyaniline** 7,7,8,8-tetracyanoquino-dimethane (TCNQ) complex films grown by vacuum evaporation
AU Li, J. C.; Xue, Z. Q.; Zeng, Y.; Liu, W. M.; Wu, Q. D.; Song, Y. L.; Jiang, L.
CS Department of Electronics, Peking University, Beijing, 100871, Peop. Rep. China
SO Thin Solid Films (2000), 374(1), 59-63
CODEN: THSFAP; ISSN: 0040-6090
PB Elsevier Science S.A.
DT Journal
LA English
CC 37-5 (Plastics Manufacture and Processing)
Section cross-reference(s): 76
AB High quality polycryst. **polyaniline**/7,7,8,8-tetracyanoquino-dimethane (PANI-TCNQ) complex thin films were grown by vacuum evaporation from powdered mixts. The structure of the PANI-TCNQ complexes was studied using scanning tunneling microscopy (TEM) and high resolution SEM. The films showed totally different optical and elec. properties from both of PANI and TCNQ films. Unusual two-dimensional aggregates were observed in the films. A charge transfer phenomenon, from the PANI **chains** to the TCNQ mols., was observed from the Fourier transfer IR spectrum.
ST **polyaniline** tetracyanoquinodimethane complex prepn vacuum deposition; crystallinity vacuum evapd **polyaniline** TCNQ complex cond
IT Charge transfer interaction
Conducting polymers
Crystallinity
Electric conductivity
Polymer **chains**
Polymer morphology
(morphol. and conductivity and optical properties of **polyaniline** 7,7,8,8-tetracyanoquinodimethane (TCNQ) complex grown by simultaneous vacuum evaporation)
IT Charge transfer complexes
Polyanilines
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(morphol. and conductivity and optical properties of **polyaniline** 7,7,8,8-tetracyanoquinodimethane (TCNQ) complex grown by simultaneous vacuum evaporation)
IT Vapor deposition process
(vacuum; morphol. and conductivity and optical properties of **polyaniline** 7,7,8,8-tetracyanoquinodimethane (TCNQ) complex grown by simultaneous vacuum evaporation)
IT **1518-16-7 25233-30-1, Polyaniline**

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(morphol. and conductivity and optical properties of **polyaniline** 7,7,8,8-tetracyanoquinodimethane (TCNQ) complex grown by simultaneous vacuum evaporation)

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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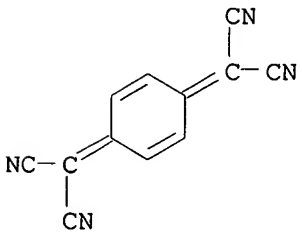
IT **1518-16-7 25233-30-1, Polyaniline**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(morphol. and conductivity and optical properties of **polyaniline** 7,7,8,8-tetracyanoquinodimethane (TCNQ) complex grown by simultaneous vacuum evaporation)

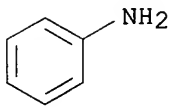
RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N

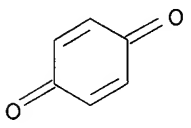


L104 ANSWER 12 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:665442 HCAPLUS
DN 131:260021
ED Entered STN: 19 Oct 1999
TI Polymer batteries
IN Okada, Shinako; Nishiyama, Toshihiko; Harada, Manabu; Fujiwara, Masaki
PA NEC Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01M010-40
ICS H01M004-02; H01M004-60; H01M010-36
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11288740	A2	19991019	JP 1998-90174	19980402
PRAI	JP 1998-90174		19980402		

AB The batteries use cathodes containing reduced **polyaniline** or its derivative, reduced p-doped conducting polymer having a **conjugated** π bond system or its derivative, benzoquinone or its derivative, or a reduced form of a organic compds. or polymers capable of releasing or receiving electrons by an electrochem. redox reaction; and anodes composed of oxidized polypyridine, polypyridine or its derivative, oxidized n-doped conducting polymer having a **conjugated** π bond system or its derivative, anthraquinone or its derivative, or an oxidized form of a organic compds. or polymers capable of releasing or receiving electrons by an electrochem. redox reaction; and are charged by constant current charging.
ST battery conducting polymer electrode
IT Polyanilines
RL: DEV (Device component use); USES (Uses)
(cathodes for secondary polymer batteries)
IT Secondary batteries
(electrodes for secondary polymer batteries)
IT 84-65-1, Anthraquinone 25013-01-8, Polypyridine
RL: DEV (Device component use); USES (Uses)
(anodes for secondary polymer batteries)
IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, uses **25233-30-1**, **Polyaniline**
RL: DEV (Device component use); USES (Uses)
(cathodes for secondary polymer batteries)
IT 104-15-4, p-Toluenesulfonic acid, uses 69444-47-9
RL: DEV (Device component use); USES (Uses)

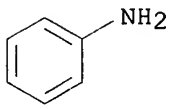
(electrolyte compns. for batteries with secondary polymer electrodes)
IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, uses **25233-30-1**, **Polyaniline**
RL: DEV (Device component use); USES (Uses)
(cathodes for secondary polymer batteries)
RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L104 ANSWER 13 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:279820 HCAPLUS
DN 130:284497
ED Entered STN: 06 May 1999
TI Polymer secondary battery with rapid charge and discharge
IN Okada, Shinako; Nishiyama, Toshihiko; Kurihara, Junko; Sakata, Koji; Harada, Gaku
PA NEC Corporation, Japan; NEC Tokin Corporation
SO Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM H01M004-60
ICS H01M010-40; H01M004-02
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 911893	A1	19990428	EP 1998-119869	19981020
EP 911893	B1	20030305		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11126610	A2	19990511	JP 1997-292598	19971024
JP 3039484	B2	20000508		
PRAI JP 1997-292598	A	19971024		

AB A polymer battery is herein disclosed which comprises a pair of electrodes for carrying out the receipt and release of electrons in accordance with

an oxidation-reduction reaction of a compound to take out an elec. energy, and an electrolyte, a solid electrolyte or a gel electrolyte, wherein as a compound constituting the electrodes, a π- **conjugated** polymer including a nitrogen atom and/or a quinone compound is used; as the electrolyte, the solid electrolyte or the gel electrolyte, a compound containing a proton is used; and the receipt and release of the electrons in accordance with the oxidation-reduction reaction of the compound are carried out only by the bonding and elimination of the proton bonded to or coordinated with the nitrogen atom or the proton of a produced hydroxyl group under the control of a proton concentration and a working voltage. The thus constituted polymer battery enables rapid charge and discharge and is excellent in cycle rapid charge and discharge.

ST polymer battery electrode electrolyte

IT Polymerization
(chemical; polymer secondary battery with rapid charge and discharge)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(fluorine- and sulfo-containing, ionomers; polymer secondary battery with rapid charge and discharge)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(fluorine-containing, sulfo-containing, ionomers; polymer secondary battery with rapid charge and discharge)

IT Battery electrodes
Battery electrolytes
Secondary batteries
(polymer secondary battery with rapid charge and discharge)

IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(polymer secondary battery with rapid charge and discharge)

IT Fluoropolymers, uses
Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(polyoxyalkylene-, sulfo-containing, ionomers; polymer secondary battery with rapid charge and discharge)

IT Ionomers
RL: DEV (Device component use); USES (Uses)
(polyoxyalkylenes, fluorine- and sulfo-containing; polymer secondary battery with rapid charge and discharge)

IT 26101-52-0, Polyvinylsulfonic acid
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(**polyaniline**-doped; polymer secondary battery with rapid charge and discharge)

IT 68-12-2, Dmf, uses 76-05-1, Trifluoroacetic acid, uses 84-65-1, Anthraquinone **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, uses 108-32-7, Propylene carbonate 7440-44-0, Carbon, uses 12679-43-5, Naphthaquinone 25013-01-8, Polypyridine 30604-81-0, Polypyrrole 190201-51-5, Pyrimidine homopolymer
RL: DEV (Device component use); USES (Uses)
(polymer secondary battery with rapid charge and discharge)

IT **25233-30-1, Polyaniline**
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(polymer secondary battery with rapid charge and discharge)

IT 24937-79-9, Polyvinylidene fluoride
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(polymer secondary battery with rapid charge and discharge)
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(7) Otagawa, T; US 5002700 A 1991 HCAPLUS
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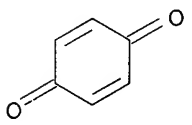
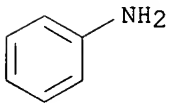
IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, uses
RL: DEV (Device component use); USES (Uses)
(polymer secondary battery with rapid charge and discharge)
RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



IT **25233-30-1, Polyaniline**
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(polymer secondary battery with rapid charge and discharge)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L104 ANSWER 14 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:693672 HCAPLUS
DN 130:27248
ED Entered STN: 02 Nov 1998
TI Secondary batteries, proton-conducting polymer electrolytes, and electrode active mass
IN Takeuchi, Masataka; Ookubo, Takashi
PA Showa Denko K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DT Patent
LA Japanese

IC ICM H01B001-12
ICS C08F020-00; C08G018-06; C08G061-02; C08G073-00; C08L075-00; H01M004-02; H01M004-50; H01M004-60; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10289617	A2	19981027	JP 1997-97435	19970415
PRAI JP 1997-97435		19970415		

AB Claimed secondary batteries use proton-conducting polymer solid electrolytes. Claimed electrolytes contain protonic acids and are obtained from compds. having polymerizing functional group CH2:C(R1)CO2 or CH2C(R2)CO(OR3)xNHCO2 (R1, R2 = H or alkyl; R3 = C<10 divalent group; x = 0-10) by polymerization using heat and/or active light. Claimed electrodes use composites of active mass selected from polymers having sulfonic acid side **chains**, polymers containing polypyridine, polypyrimidine, and/or polyquinone in the backbone, or Mn oxides with the above polymer electrolytes. The batteries have high safety, reliability, large capacity, and long cycle life.

ST proton conducting polymer electrolyte battery safety; composite electrode polymer electrolyte; photopolymn proton conducting polymer electrolyte; urethane acrylic polyoxyalkylene electrolyte battery

IT Battery electrodes
Battery electrolytes
Conducting polymers
Secondary batteries
(batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Polyamines
Polyanilines
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(composites with polymer electrolytes, electrodes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Acids, uses
Sulfonic acids, uses
RL: DEV (Device component use); USES (Uses)
(electrolytes containing; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Urethanes
RL: DEV (Device component use); USES (Uses)
(electrolytes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Polyoxyalkylenes, uses
Polyoxyalkylenes, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(fluorine-containing, electrolytes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(fluorine-containing, perfluoro, acrylic, electrolytes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Safety
(in manufacture of proton-conducting polymer electrolytes for batteries)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(perfluoro, perfluoro, acrylic, electrolytes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Ionic conductors
(polymeric; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Sulfonic acids, uses
Sulfonic acids, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(polymers, composites with polymer electrolytes, electrodes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Fluoropolymers, uses
Fluoropolymers, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(polyoxyalkylene-, electrolytes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Fluoropolymers, uses
Fluoropolymers, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(polyoxyalkylene-, perfluoro, acrylic, electrolytes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Polymers, uses
Polymers, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(sulfo-containing, composites with polymer electrolytes, electrodes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT 25013-01-8, Polypyridine 71730-08-0
RL: DEV (Device component use); USES (Uses)
(composites with polymer electrolytes, electrodes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT 7446-11-9DP, Sulfuric anhydride, reaction products with **polyaniline** 11129-60-5P, Manganese oxide **25233-30-1DP, Polyaniline**, sulfonated **25233-30-1P, Polyaniline 26745-90-4P** 190201-51-5P, Pyrimidine homopolymer
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(composites with polymer electrolytes, electrodes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

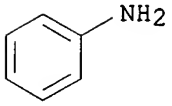
IT 104-15-4, uses 7664-38-2, Phosphoric acid, uses
RL: DEV (Device component use); USES (Uses)
(electrolytes containing; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT 202739-72-8P
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(electrolytes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT 76287-91-7P 87260-75-1P 203391-79-1DP, reaction products with polyoxyalkylenes, fluorine-containing
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation of; in manufacture of proton-conducting polymer electrolytes for batteries)
IT 30674-80-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, urethane compds. from; in manufacture of proton-conducting polymer electrolytes for batteries)
IT 25791-96-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with methacryloyloxyethyl isocyanate; in manufacture of proton-conducting polymer electrolytes for batteries)
IT 375-01-9, 2,2,3,3,4,4,4-Heptafluoro-1-butanol 37286-64-9, Polyoxypropylene monomethyl ether 107852-51-7, Fomblin Z-DOL
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with methacryloyloxyethylisocyanate; in manufacture of proton-conducting polymer electrolytes for batteries)
IT **25233-30-1DP, Polyaniline,** sulfonated
25233-30-1P, Polyaniline 26745-90-4P
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(composites with polymer electrolytes, electrodes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

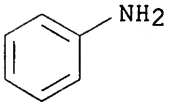
CRN 62-53-3
CMF C6 H7 N



RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

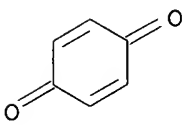
CRN 62-53-3
CMF C6 H7 N



RN 26745-90-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 106-51-4
CMF C6 H4 O2



L104 ANSWER 15 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:373193 HCAPLUS
DN 129:68118
ED Entered STN: 19 Jun 1998
TI Heteroaromatic Chromophore Functionalized Epoxy-Based Nonlinear Optical Polymers
AU Wang, Xiaogong; Yang, Ke; Kumar, Jayant; Tripathy, Sukant K.; Chittibabu, Kethinni G.; Li, Lian; Lindsay, Geoffrey
CS Center for Advanced Materials Departments of Chemistry and Physics, University of Massachusetts, Lowell, MA, 01854, USA
SO Macromolecules (1998), 31(13), 4126-4134
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
CC 35-8 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 73
AB A series of epoxy-based second-order nonlinear optical (NLO) polymers containing heteroarom. chromophores were designed. Precursor polymers were prepared from diglycidyl ether of Bisphenol A and aniline or 4-(2-thienyl)aniline. The precursor polymers were post-functionalized by an azo-coupling reaction and tricyanovinylation to form a series of NLO polymers containing heteroarom. chromophores. The versatility of the post-modification strategy previously reported was extended to include various heteroarom. chromophores in the polymers at the final stage of synthesis. The correlation between different heteroarom. chromophore structure and NLO properties of the polymers was extensively studied. Polymers containing heteroarom. chromophores exhibit improved temporal stability and enhanced NLO activity. The d33 was 80 pm/V at 1.550 μm for a representative polymer of the class containing 2-(4-aminophenyl)-(5-tricyanovinyl)thiophene chromophores. The NLO properties of the poled polymers exhibit long-term stability at 80°.
ST epoxyaniline functionalization heteroarom chromophore NLO material; nonlinear optical property **polyaniline** epoxy chromophore
IT Polymer **chains**
(configuration; preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)
IT Polyamines
Polyamines
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(epoxy, aniline-based, heteroarom. chromophore functionalized; preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)
IT Electrooptical effect

(poling; preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)

IT Epoxy resins, preparation
Epoxy resins, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyamine-, aniline-based, heteroarom. chromophore functionalized; preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)

IT Coupling reaction
Diazotization
Dipole moment
Electronic transition
Glass transition temperature
Nonlinear optical properties
Second-harmonic generation
Solubility
Structural phase transition
Substitution reaction, electrophilic
(preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)

IT 504-24-5D, 4-Pyridinamine, reaction products with epoxy polyanilines
RL: PRP (Properties)
(preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)

IT 121-66-4DP, 2-Amino-5-nitrothiazole, diazonium salts, reaction products with epoxy polyanilines **670-54-2DP**, Tetracyanoethylene, reaction products with epoxy poly(thienylaniline)s 6285-57-0DP, 2-Amino-6-nitrobenzothiazole, diazonium salts, reaction products with epoxy polyanilines 30974-11-9DP, Aniline-bisphenol a diglycidyl ether copolymer, reaction products with nitrothiazole and coumarin and cyanoethylene chromophores 39565-05-4DP, 2-Amino-5-(4-nitrophenylsulfonyl)thiazole, diazonium salts, reaction products with epoxy polyanilines 40953-34-2DP, 2-Amino-4,5-imidazoledicarbonitrile, diazonium salts, reaction products with epoxy polyanilines 53518-15-3DP, 7-Amino-4-(trifluoromethyl)coumarin, diazonium salts, reaction products with epoxy polyanilines 208933-69-1DP, Bisphenol A diglycidyl ether-4-(2-thienyl)aniline copolymer, reaction products with nitrothiazole and coumarin and cyanoethylene chromophores
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)

IT 7782-78-7, Nitrosylsulfuric acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)

RE.CNT 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD

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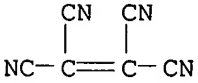
IT **670-54-2DP**, Tetracyanoethylene, reaction products with epoxy poly(thienylaniline)s
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)

RN 670-54-2 HCAPLUS
CN Ethenetetracarbonitrile (6CI, 8CI, 9CI) (CA INDEX NAME)



L104 ANSWER 16 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:344579 HCAPLUS
DN 129:25370
ED Entered STN: 10 Jun 1998
TI Dielectric, paramagnetic, or phosphorescent nanoparticles biosensor for competition assays
IN Ewart, Thomas G.; Bogle, Gavin T.
PA Noab Immunoassay Inc., Can.; Ewart, Thomas G.; Bogle, Gavin T.
SO PCT Int. Appl., 86 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N033-543
ICS G01N033-58; G01N027-327; G01N027-22; G01N021-64; C12N007-00; C12Q001-68
CC 9-1 (Biochemical Methods)
Section cross-reference(s): 7, 15, 52
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9821587	A1	19980522	WO 1997-CA828	19971107
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	US 5922537	A	19990713	US 1996-746420	19961108
	AU 9748597	A1	19980603	AU 1997-48597	19971107
PRAI	US 1996-746420		19961108		
	WO 1997-CA828		19971107		

AB Biosensor technol. based on the labeling entities having particle reporters provides cost competitive readily manufactured assay devices. Submicron particles of uniform dimension in metals, polymers, glasses, ceramics and biol. structures such as phages are used as the labeling entities. Such reporter particles greatly increase the sensitivity and accuracy, and provide a variety of assay techniques for determining analyte presence in a sample. The particles may have dielec., paramagnetic and/or phosphorescent properties; such particles are particularly useful in a variety of competition type assays. Novel phosphor and phage particles are provided for use as unique labeling entities. Goat anti-human IgG-alkaline phosphatase **conjugate** was treated with ZnS:Cu:Al phosphor microparticles and then with glutaraldehyde for crosslinking. The particles were added to wells covalently coated with serially diluted human IgG. The crosslinked goat anti-human IgG-alkaline phosphatase bound to the wells in proportion to the concentration of human IgG bound. Another example illustrates direct electron beam excitation of microparticle phosphors at ambient pressure.
ST dielec nanoparticle biosensor competition assay; paramagnetic nanoparticle biosensor competition assay; phosphorescence nanoparticle biosensor competition assay
IT Immunoglobulins
RL: RCT (Reactant); RACT (Reactant or reagent)
(G, **conjugates**, goat anti-human, with alkaline phosphatase;

dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Phosphorimetry
(apparatus for; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Amines, biological studies
Amines, biological studies
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(aryl, tertiary, polymers, hole transporter dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Avidins
RL: RCT (Reactant); RACT (Reactant or reagent)
(**conjugates** with alkaline phosphatase; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Rare earth metals, biological studies
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(cryptates, solid-phase semiconductor polymer dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Biosensors
(diagnostic; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Capacitors
Electrodes
Immunoassay
Nucleic acid hybridization
Particles
(dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Gene
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Analysis
(displacement competition assay; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Electric transport properties
(electron and hole transporters, solid-phase semiconductor polymer dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Fullerenes
Polyoxadiazoles
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(electron transporter dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Polycyclic compounds
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(fluorescent, solid-phase semiconductor polymer dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for

competition assays)
IT Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(heat-shrink tubing, in phosphorescence microparticle sensors; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)
IT Gel electrophoresis
Membranes, nonbiological
(in nucleic acid sequencing or hybridization assay apparatus; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)
IT Semiconductor materials
(inorg. nanocryst., solid-phase semiconductor polymer dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)
IT Semiconductor devices
(microchips; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)
IT Particles
(paramagnetic; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)
IT Bacteriophage
Electric insulators
Phosphors
(particles; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)
IT Analytical apparatus
(phosphorescence; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)
IT Microparticles
Nanoparticles
(reporter; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)
IT Nucleic acids
RL: PRP (Properties)
(sequencing; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)
IT Polymers, biological studies
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(solid semiconductor phosphors; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)
IT Metalloporphyrins
Rare earth complexes
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(solid-phase semiconductor polymer dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)
IT Polythiophenylenes
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(solid-phase semiconductor polymer phosphor reporter label; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)
IT Dopants
(solid-phase semiconductor polymer; dielec. and paramagnetic and or

phosphorescent nanoparticles biosensor for competition assays)

IT Dyes
(squarilium, solid-phase semiconductor polymer dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Pipes and Tubes
(stainless steel, in phosphorescence microparticle sensors; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 9001-78-9DP, Alkaline phosphatase, **conjugates** with avidin or goat anti-human IgG and crosslinked with glutaraldehyde to cage phosphor microparticles
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); CAT (Catalyst use); DEV (Device component use); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 111-30-8, Glutaraldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)
(dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 494-72-4, Diphenoquinone **1989-32-8** 7429-90-5D, Aluminum, quintolates, biological studies
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(electron transporter dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 9002-84-0, Teflon
RL: DEV (Device component use); USES (Uses)
(heat-shrink tubing, in phosphorescence microparticle sensors; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 1306-23-6, Cadmium sulfide (CdS), biological studies
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(inorg. nanocryst. semiconductor dopants; Mn doped, dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 1314-98-3, Zinc sulfide (ZnS), biological studies
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(inorg. nanocryst. semiconductor dopants; Mn, Cu, Al, Ag and Tb doped, dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 7440-27-9, Terbium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(inorg. nanocryst. semiconductor dopants; dopant for Zinc sulfide, dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 7440-53-1, Europium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(phosphor microparticles; Y2O2S dopant, dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 12340-04-4, Yttrium oxide sulfide (Y2O2S)

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(phosphor microparticles; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 7429-90-5, Aluminum, uses 7440-50-8, Copper, uses
RL: MOA (Modifier or additive use); USES (Uses)
(phosphor microparticles; zinc sulfide dopant, dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 132-65-0D, Dibenzothiophene, compds. 486-25-9D, Fluorenone, compds. 32283-92-4, N,N'-Bis(3-aminophenyl)-3,4,9,10-perylenetetracarboxylic diimide 76372-76-4, N,N'-Bis(2,6-dimethylphenyl)-3,4,9,10-perylenetetracarboxylic diimide 83054-80-2
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(polycyclic organic fluorescent dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 198-55-0D, Perylene, compds. 289-74-7, Thiapyrylium 574-93-6D, Phthalocyanine, compds. 1047-16-1D, Quinacridone, compds. 1254-43-9 23627-89-6D, Naphthalocyanine, compds.
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(solid-phase semiconductor polymer dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 4499-83-6 25067-59-8, Poly(vinylcarbazole) 25190-62-9, Poly(1,4-phenylene) **25233-30-1**, Poly(aniline) 51325-05-4, Poly(thienylene) 66280-99-7, Poly(thienylenevinylene) 76188-55-1, Poly(methylphenylsilane) 96638-49-2, Poly(phenylenevinylene) 123863-98-9, Poly(9,9-dihexylfluorene) 146088-00-8, Poly(methylphenylsilane) 197500-59-7
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(solid-phase semiconductor polymer phosphor reporter label; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 7439-96-5, Manganese, uses 7440-22-4, Silver, uses
RL: MOA (Modifier or additive use); USES (Uses)
(zinc sulfide dopant, dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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(3) The John Hopkins UniversityApplied Physics Laboratory; US 4822566 A 1987
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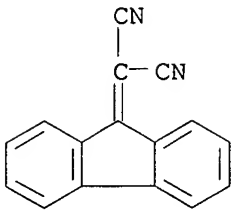
(5) Wollongong Uniadvice Limited; WO 8911649 A 1989 HCAPLUS

IT **1989-32-8**
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(electron transporter dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

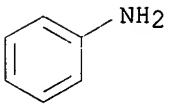
RN 1989-32-8 HCAPLUS
CN Propanedinitrile, 9H-fluoren-9-ylidene- (9CI) (CA INDEX NAME)



IT **25233-30-1**, Poly(aniline)
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(solid-phase semiconductor polymer phosphor reporter label; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L104 ANSWER 17 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:176598 HCAPLUS
DN 128:210034
ED Entered STN: 26 Mar 1998
TI Electrochemical post self-assembly transformation of 4-aminothiophenol monolayers on gold electrodes
AU Lukkari, Jukka; Kleemola, Kari; Meretoja, Minna; Ollonqvist, Tapio; Kankare, Jouko
CS Department of Chemistry, University of Turku, Turku, FIN-20014, Finland
SO Langmuir (1998), 14(7), 1705-1715
CODEN: LANGD5; ISSN: 0743-7463
PB American Chemical Society
DT Journal
LA English
CC 72-2 (Electrochemistry)
Section cross-reference(s): 22, 73
AB Electrochem. oxidation of a self-assembled monolayer (SAM) of 4-aminothiophenol on polycryst. gold electrodes leads to a complex voltammetric behavior characterized by an initial irreversible oxidation at .apprx.+0.77 V vs. SSCE (sodium SCE) and the formation of a pseudostable surface redox couple at +0.53 V. The oxidized form of this couple is hydrolyzed in acidic solns. to another redox pair with the formal redox potential of .apprx.+0.3 V. We show that the oxidation leads to a radical-radical coupling reaction between two adjacent aminothiophenol mols., yielding an electrode surface modified with 4'-mercapto-4-

aminodiphenylamine, the thiol derivative of a head-to-tail aniline dimer. The oxidized form of the dimer, quinone diimine, undergoes hydrolysis to the corresponding quinone monoimine and, eventually, to the original surface-bound 4-aminothiophenol and benzoquinone. The mechanism of the monolayer oxidation reaction has been elucidated by a variety of electrochem. and spectroelectrochem. techniques together with electrochem. data obtained with a soluble model compound, 4-(methylthio)aniline. In addition, XPS characterization of the 4-aminothiophenol (Au-SPhNH2), the 2-(4'-mercaptophenylamino)benzoquinone (Au-SPhNH-BQ), and the oxidized 4-aminothiophenol SAMs is reported. The formation of an electrode surface modified with aniline dimers explains the beneficial effect that 4-aminothiophenol SAM exhibits in the electrochem. polymerization of aniline. We suggest that it favors the direct addition of aniline monomers to the oligomer **chains** on the surface, which results in a more ordered structure compared with the deposition of oligomers from the solution This increased order is very important for the preparation of highly ordered **polyaniline** films for advanced applications in mol. electronics and sensor technol. The results also show that after the initial dimerization step, aniline polymerization can proceed through coupling of the neutral monomer to the oxidized oligomer.

ST aminothiophenol monolayer gold electrode; transformation electrochem post self assembly; oxidn electrochem mechanism methylthioaniline

IT Electrooptical effect
Electrooptical effect
Electrooptical effect
(UV-visible electroreflection spectra; of Au-SPhNH2 surface oxidized and partially transformed further in HClO4)

IT Reflection spectra
Reflection spectra
Reflection spectra
(UV-visible electroreflection; of Au-SPhNH2 surface oxidized and partially transformed further in HClO4)

IT Electrodes
(aminoquinone-modified electrodes prepared by immersing aminothiophenol-modified gold electrode in benzoqunone in acetonitrile/aqueous phosphate buffer)

IT Electric potential
(dependence of methylthioaniline oxidation peak potential on sweep rate)

IT Monolayers
(electrochem. post self-assembly transformation of aminothiophenol monolayers on gold electrodes)

IT Dimerization
(electrochem.; of methylthioaniline)

IT UV and visible spectra
UV and visible spectra
UV and visible spectra
(electroreflection; of Au-SPhNH2 surface oxidized and partially transformed further in HClO4)

IT Oxidation, electrochemical
(of self-assembled monolayer of aminothiophenol on polycryst. gold electrodes)

IT **106-51-4**, 1,4 Benzoquinone, uses
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(aminoquinone-modified electrodes prepared by immersing aminothiophenol-modified gold electrode in benzoqunone in acetonitrile/aqueous phosphate buffer)

IT 7440-44-0, Carbon, uses
RL: DEV (Device component use); USES (Uses)
(cyclic voltammetry of methylthioaniline on glassy carbon electrode)
IT 104-96-1, 4-(Methylthio)aniline
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(cyclic voltammetry on glassy carbon electrode)
IT 7601-90-3, Perchloric acid, uses
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(electrochem. oxidation of self-assembled monolayer of aminothiophenol on polycryst. gold electrodes in solution containing)
IT 7440-57-5, Gold, uses
RL: DEV (Device component use); USES (Uses)
(electrochem. post self-assembly transformation of aminothiophenol monolayers on gold electrodes)
IT 1193-02-8, 4-Aminothiophenol
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(electrochem. post self-assembly transformation of aminothiophenol monolayers on gold electrodes)
RE.CNT 122 THERE ARE 122 CITED REFERENCES AVAILABLE FOR THIS RECORD
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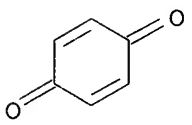
(117) Yang, H; J Electroanal Chem 1992, V339, P423 HCAPLUS
(118) Ye, S; J Chem Soc, Faraday Trans 1996, V92, P3813 HCAPLUS
(119) Ye, S; Langmuir 1997, V13, P3157 HCAPLUS
(120) Young, J; Langmuir 1996, V12, P1219 HCAPLUS
(121) Zhang, L; Langmuir 1993, V9, P786 HCAPLUS
(122) Zhong, C; Anal Chem 1995, V67, P709A HCAPLUS

IT **106-51-4**, 1,4 Benzoquinone, uses
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(aminoquinone-modified electrodes prepared by immersing aminothiophenol-modified gold electrode in benzoqunone in acetonitrile/aqueous phosphate buffer)

RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



L104 ANSWER 18 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:580591 HCAPLUS
DN 125:276946
ED Entered STN: 30 Sep 1996
TI Synthesis of polyanilines and copolymers by melt condensation
IN Afzali-Ardakani, Ali; Gelorme, Jeffrey D.
PA International Business Machines Corporation, USA
SO U.S., 7 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C08G012-00
NCL 528229000

CC 35-5 (Chemistry of Synthetic High Polymers)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5554717	A	19960910	US 1995-544902	19951018
PRAI	US 1995-544902		19951018		

AB Crystalline **polyaniline**, its derivs. and its copolymers with other **conjugated** monomers are synthesized by melt polycondensation of bifunctional starting materials having a quinone and N-protected amine group, and conversion of the polycondensation polymers to corresponding doped and conductive form of the polymers. N-tert-butyloxycarbonyl-phenylenediamine and benzoquinone were reacted to give N-tert-butyloxycarbonyl-indoaniline, which was polycondensed to give a low mol. weight end capped **polyaniline**.

ST butyloxycarbonyl indoaniline polymn **emeraldine**

IT Polyazomethines
RL: IMF (Industrial manufacture); PREP (Preparation)
(synthesis of polyanilines and copolymers by melt condensation)

IT Polymerization
(melt, synthesis of polyanilines and copolymers by melt condensation)

IT **25233-30-1P, Polyaniline**
RL: IMF (Industrial manufacture); PREP (Preparation)
(of **emeraldine** structure; synthesis of polyanilines and copolymers by melt condensation)

IT 55330-79-5P 178691-04-8P, N-tert-Butoxycarbonyl-indoaniline homopolymer
RL: IMF (Industrial manufacture); PREP (Preparation)
(synthesis of polyanilines and copolymers by melt condensation)

IT 178691-03-7P, N-tert-Butoxycarbonyl-indoaniline
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of polyanilines and copolymers by melt condensation)

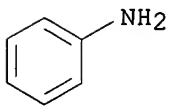
IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, reactions 182704-19-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of polyanilines and copolymers by melt condensation)

IT **25233-30-1P, Polyaniline**
RL: IMF (Industrial manufacture); PREP (Preparation)
(of **emeraldine** structure; synthesis of polyanilines and copolymers by melt condensation)

RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

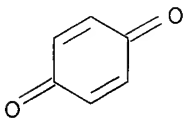
CM 1

CRN 62-53-3
CMF C6 H7 N



IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of polyanilines and copolymers by melt condensation)

RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



L104 ANSWER 19 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:996900 HCAPLUS
DN 124:24884
ED Entered STN: 22 Dec 1995
TI Dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**
IN Ruedel, Ulrich; Gruendig, Bernd
PA Institut fuer Chemo- und Biosensorik, Germany
SO Ger., 6 pp.
CODEN: GWXXAW
DT Patent
LA German
IC ICM C12N011-08
ICS C12N011-18
CC 7-7 (Enzymes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4419024	C1	19951019	DE 1994-4419024	19940531
PRAI	DE 1994-4419024		19940531		

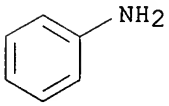
AB A dehydrogenase and/or a reductase is coimmobilized in a polymeric matrix with its cofactor(s). The cofactor is attached to a polymeric spacer such as PEG, a polypeptide, or a polysaccharide. Relative to prior art methods, the described method provides improved enzymic stability and activity. The method finds use in preparation of enzyme electrodes and sensors. Thus, an aqueous solution of Moldola blue, PEG-NAD(H) **conjugate**, and alc. dehydrogenase was degassed with N. Pyrrole was added to the solution then Pt and Ag/AgCl electrodes were inserted into the solution Upon application of 700 mV for 1 min, a polymer layer was deposited on the Pt electrode. This was used as an enzyme electrode for detection of EtOH.

ST dehydrogenase reductase coimmobilization polymer cofactor **conjugate**
IT Polysaccharides, uses
Proteins, uses
RL: DEV (Device component use); USES (Uses)
(**conjugates** with cofactors; dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)
IT Coenzymes
RL: DEV (Device component use); USES (Uses)
(**conjugates** with polymers; dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)
IT Sensors
(dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)
IT Acrylic polymers, uses
Urethane polymers, uses
RL: DEV (Device component use); USES (Uses)
(dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)

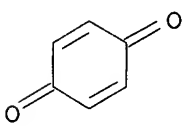
IT Electrodes
(bio-, enzyme, dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)
IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(polysulfonates, dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)
IT Membranes
(semipermeable, dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)
IT 53-57-6D, NADPH, **conjugates** with polymeric spacers 53-59-8D, NADP, **conjugates** with polymeric spacers 53-84-9D, NAD, **conjugates** with polymeric spacers 58-68-4D, NADH, **conjugates** with polymeric spacers 7057-57-0D, Meldola blue, PEG **conjugates** 9002-89-5, Polyvinyl alcohol 9031-72-5, Alcohol dehydrogenase 9035-82-9, Dehydrogenase 9037-80-3, Reductase **25233-30-1, Polyaniline** 25322-68-3D, **conjugates** with cofactors 25667-98-5, Poly-o-phenylenediamine 27073-41-2 30604-81-0, Polypyrrole 75788-67-9, Polyphenothiazine
RL: DEV (Device component use); USES (Uses)
(dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)
IT 92-82-0, Phenazine 92-84-2, Phenothiazine **106-51-4**, Quinone, uses 135-67-1, Phenoxazine
RL: DEV (Device component use); USES (Uses)
(redox mediator; dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)
IT **25233-30-1, Polyaniline**
RL: DEV (Device component use); USES (Uses)
(dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



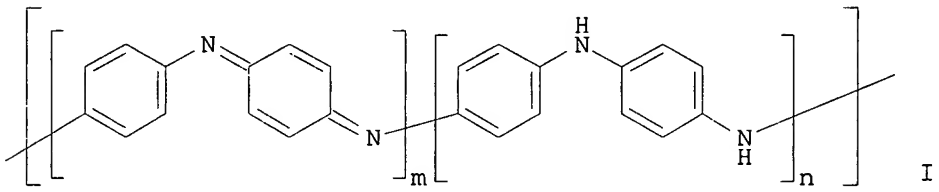
IT **106-51-4**, Quinone, uses
RL: DEV (Device component use); USES (Uses)
(redox mediator; dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)
RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



L104 ANSWER 20 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:763587 HCAPLUS
DN 123:356876
ED Entered STN: 30 Aug 1995
TI Manufacture of solid electrolytes and solid electrolyte capacitors
IN Abe, Masao; Yoshii, Keisuke; Uetani, Yoshihiro; Ootani, Akira
PA Nitto Denko Corp, Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01G009-028
ICS C08G073-00; C08L001-08; C08L079-00
CC 76-10 (Electric Phenomena)
Section cross-reference(s): 38
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 07086093	A2	19950331	JP 1993-224751	19930909
PRAI JP 1993-224751		19930909		

GI



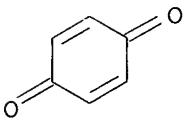
I

AB The solid electrolytes for capacitors comprise dielec. oxide films and elec. conductive polymer films on the dielec. oxide films, which contain (a) a first polymer of organic solution soluble **polyaniline** having repeat unit of quinonediimine and phenyldiamine shown in I, (where m, n = mol. percentages of quinonediimine unit and phenyldiamine unit, 0<m<1, 0<n<1, m+n = 1), (b) a second polymer having ester or amide on its main **chain** or side **chain** in the repeat unit or a derivative of cellulose, and (c) proton acid of pKa < 4.8.
ST solid electrolyte capacitor elec conductive polymer; **polyaniline** quinonediimine phenyldiamine polyamide cellulose deriv
IT Electric capacitors
Electrolytes
(manufacture of solid electrolytes and solid electrolyte capacitors)
IT Rubber, synthetic
RL: TEM (Technical or engineered material use); USES (Uses)
(ethoxylated bisphenol A-ethylene glycol-isophthalic acid-neopentyl glycol-terephthalic acid, manufacture of solid electrolytes and solid electrolyte capacitors)
IT 7429-90-5, Aluminum, uses
RL: DEV (Device component use); USES (Uses)
(manufacture of solid electrolytes and solid electrolyte capacitors)
IT **106-51-4**, p-Benzoquinone, uses 110-04-3, 1-2-Ethane disulfonic acid 7440-25-7, Tantalum, uses 9003-20-7 9003-39-8, PVP 9004-36-8, CAB 551-0.01 9004-57-3 9004-58-4, EHEC high 9011-14-7 25038-59-9,

Elitel UE 3300 **25233-30-1D, Polyaniline**, oxidized
26101-52-0 109191-29-9, Vylon RV-290 112754-95-7, CX 3000 (nylon)
122783-91-9, Elitel UE 3500 164715-27-9, Fine Resin FR 301
167396-79-4, Elitel UE 3203
RL: TEM (Technical or engineered material use); USES (Uses)
(manufacture of solid electrolytes and solid electrolyte capacitors)

IT **106-51-4**, p-Benzoquinone, uses **25233-30-1D, Polyaniline**, oxidized
RL: TEM (Technical or engineered material use); USES (Uses)
(manufacture of solid electrolytes and solid electrolyte capacitors)

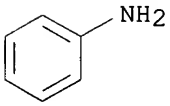
RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L104 ANSWER 21 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:436490 HCAPLUS
DN 121:36490
ED Entered STN: 23 Jul 1994
TI Redox polymers and manufacture thereof
IN Yokomichi, Taisuke; Tada, Shinichi; Hirai, Yasumasa; Yo, Takeshi
PA Osaka Gas Co Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C08G073-04
ICS H01M004-60
CC 35-8 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 72

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 06056989	A2	19940301	JP 1993-66068	19930301
PRAI JP 1992-82651		19920303		

AB The title polymers useful for secondary battery electrode materials contain quinone groups directly bonded to hydrophilic polymer main or side **chains**. Polyethylenimine was treated with 2-chloro-1,4-

naphthoquinone in MeOH in 1:1 molar ratio, and the product dissolved in DMSO was coated on a Pt electrode and used as neg. electrode together with **polyaniline** pos. electrode and 0.1M sulfuric acid electrolyte to obtain a battery with electromotive force 1.0 V, charge-discharge c.d. 30 μA, and Coulomb efficiency 95%.

ST polyethylenimine naphthoquinone redox battery electrode

IT Polyamines
RL: USES (Uses)
(quinone group-containing, for battery electrodes)

IT Electrodes
(battery, quinone group-containing polyethylenimine or polyallylamine for)

IT **1010-60-2P**, 2-Chloro-1,4-naphthoquinone
RL: PREP (Preparation)
(manufacture and reaction with polyethylenimine)

IT **84-58-2DP**, 2,3-Dichloro-5,6-dicyano-p-benzoquinone, reaction products with polyethylenimine **1010-60-2DP**, 2-Chloro-1,4-naphthoquinone, reaction products with polyethylenimine 9002-98-6DP, Polyethylenimine, reaction products with quinones 26913-06-4DP, Polyethylenimine, reaction products with quinones 30551-89-4DP, Polyallylamine, reaction products with naphthoquinone
RL: IMF (Industrial manufacture); PREP (Preparation)
(manufacture of, for secondary battery electrodes)

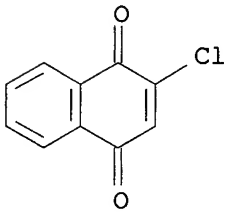
IT 10026-13-8, Phosphorus pentachloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with naphthoquinonesulfonate)

IT 34169-62-5, Potassium 1,4-naphthoquinone-2-sulfonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with phosphorus pentachloride)

IT **1010-60-2P**, 2-Chloro-1,4-naphthoquinone
RL: PREP (Preparation)
(manufacture and reaction with polyethylenimine)

RN 1010-60-2 HCAPLUS

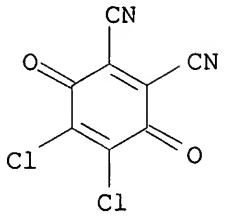
CN 1,4-Naphthalenedione, 2-chloro- (9CI) (CA INDEX NAME)



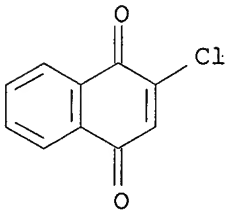
IT **84-58-2DP**, 2,3-Dichloro-5,6-dicyano-p-benzoquinone, reaction products with polyethylenimine **1010-60-2DP**, 2-Chloro-1,4-naphthoquinone, reaction products with polyethylenimine
RL: IMF (Industrial manufacture); PREP (Preparation)
(manufacture of, for secondary battery electrodes)

RN 84-58-2 HCAPLUS

CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI, 9CI) (CA INDEX NAME)

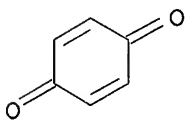


RN 1010-60-2 HCAPLUS
CN 1,4-Naphthalenedione, 2-chloro- (9CI) (CA INDEX NAME)



L104 ANSWER 22 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:218754 HCAPLUS
DN 120:218754
ED Entered STN: 30 Apr 1994
TI Chemical and electrochemical syntheses, and characterization of poly(2,5-dimethoxyaniline) (PDMA): a novel, soluble, conducting polymer
AU Storrier, Gregory D.; Colbran, Stephen B.; Hibbert, D. Brynn
CS School of Chemistry, University of New South Wales, P.O. Box 1, Kensington, NSW, 2033, Australia
SO Synthetic Metals (1994), 62(2), 179-86
CODEN: SYMEDZ; ISSN: 0379-6779
DT Journal
LA English
CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 72
AB Poly(2,5-dimethoxyaniline) (PDMA) is obtained either from chemical oxidation with ammonium peroxydisulfate or from electrooxidn. of the corresponding monomer in aqueous hydrochloric acid. UV-visible, 1H NMR, and FT-IR spectroscopic data, and voltammetric studies are presented to demonstrate that the chemical and electrochem. prepared PDMA samples have essentially the same properties. The voltammetry of PDMA-coated electrodes is described. It is shown that the PDMA film efficiently catalyzes the proton-dependent benzoquinone-hydroquinone couple. Studies of the electropolymn. of PDMA from different aqueous acids reveal that the anion dets. the surface morphol. of the film deposited on the electrode. Preliminary results of the dependence of PDMA conductivity on pH are also presented.
ST cyclic voltammetry platinum deposited polydimethoxyaniline; electrochem polymn dimethoxyaniline inorg acid; oxidative polymn dimethoxyaniline ammonium peroxydisulfate; **emeraldine** base polydimethoxyaniline synthesis spectra; elec cond doped polydimethoxyaniline pH; hydroquinone quinone redox couple polydimethoxyaniline
IT Electric conductivity and conduction
(of doped poly(dimethoxyaniline), pH effect on)

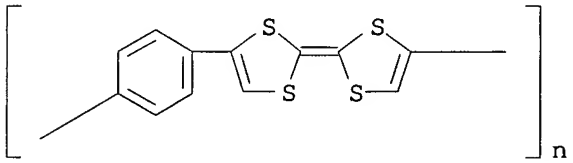
IT Electrodeposits and Electroplates
(poly(dimethoxyaniline) films, preparation and elec. conductivity of)
IT Electrodes
(poly(dimethoxyaniline)-coated platinum, for quinone-hydroquinone couple)
IT **Chains**, chemical
(twisting of, in poly(dimethoxyaniline), UV and FTIR study of)
IT Polyamines
RL: SPN (Synthetic preparation); PREP (Preparation)
(aromatic, poly(dimethoxyaniline), electrochem. and chemical preparation and characterization of)
IT Polymerization
(electrochem., of dimethoxyaniline, effect of inorg. acid on)
IT Redox reaction
(electrochem., of quinone-hydroquinone couple on electrode-deposited poly(dimethoxyaniline)-coated platinum)
IT Polymerization
(oxidative, of dimethoxyaniline by ammonium peroxydisulfate)
IT 7601-90-3, Perchloric acid, uses 7647-01-0, Hydrochloric acid, uses 7664-93-9, Sulfuric acid, uses 7697-37-2, Nitric acid, uses 16872-11-0, Hydrogen tetrafluoroborate
RL: USES (Uses)
(dimethoxyaniline electrochem. polymerization in, film morphol. in relation to)
IT 7727-54-0, Ammonium peroxydisulfate
RL: RCT (Reactant); RACT (Reactant or reagent)
(dimethoxyaniline oxidative polymerization by)
IT 88374-66-7, Poly(2,5-dimethoxyaniline)
RL: USES (Uses)
(electrochem. and chemical preparation and characterization of)
IT 7440-06-4, Platinum, uses
RL: USES (Uses)
(electrodes, coated with poly(dimethoxyaniline), hydroquinone-quinone redox reaction on)
IT 123-31-9, Hydroquinone, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation of, on poly(dimethoxyaniline)-coated platinum)
IT **106-51-4**, Quinone, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reduction of, on poly(dimethoxyaniline)-coated platinum)
IT **106-51-4**, Quinone, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reduction of, on poly(dimethoxyaniline)-coated platinum)
RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



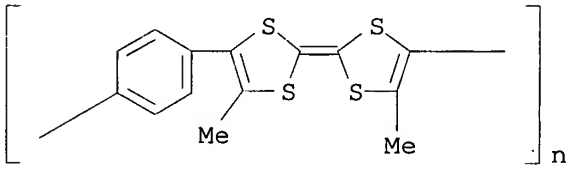
L104 ANSWER 23 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:55503 HCAPLUS
DN 120:55503
ED Entered STN: 05 Feb 1994
TI ESR studies on polymers with particular electronic and magnetic properties

AU Roth, Hans Klaus; Krinichnyi, Viktor I.
CS Dep. Nat. Sci., Leipzig Univ. Technol., Leipzig, D-O-7030, Germany
SO Makromolekulare Chemie, Macromolecular Symposia (1993), 72(10th European Symposium on Polymer Spectroscopy, 1992), 143-59
CODEN: MCMSES; ISSN: 0258-0322
DT Journal
LA English
CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 76
AB Measurements on insulating and conducting polymers from the **polyaniline** (I) family and investigations on semiconducting poly(tetrathiafulvalenes) (PTTF) are used for illustration and discussion of some methodical questions of ESR. This concerns especially the new possibilities of the recently developed high-resolution ESR in the 2-mm wave band. It is applied for the study of the nature and dynamics of paramagnetic centers (PC) and charge carriers in I and PTTF. The rate of the quasi-one-dimensional (1D) **intrachain** electron motion and of the three-dimensional (3D) **interchain** electron hopping is estimated sep. In iodine-doped PTTF the maximum elec. conductivity is 10-4 S cm-1. It is almost identical with the 3D conductivity estimated by ESR and shows the typical temperature dependence of a semiconductor. The quasi-1D conductivity is several orders of magnitude higher and shows in its dependence on temperature similarities with a metal. The I samples show in the highly doped form a maximum conductivity of .apprx.10 S·cm-11 and relatively small differences between the 1D and 3D conductivity, supporting the model of metallic islands.
ST ESR **polyaniline** polytetrathiafulvalene electronic property; elec cond **polyaniline** polytetrathiafulvalene ESR; magnetic property polytetrathiafulvalene ESR
IT Polaron
(in **polyaniline** and poly(tetrathiafulvalenes), elec. conductivity and magnetic properties in relation to)
IT Electric conductors, polymeric
(iodine-doped **polyaniline** and poly(tetrathiafulvalenes), ESR study of)
IT Electric conductivity and conduction
(of iodine-doped **polyaniline** and poly(tetrathiafulvalenes), structure in relation to)
IT Electron spin resonance
(of **polyaniline** and poly(tetrathiafulvalenes), elec. conductivity and magnetic properties in relation to)
IT Polyamines
RL: PRP (Properties)
(aniline-based, elec. conductivity and magnetic properties of, ESR study of)
IT Polaron
(di-, in **polyaniline** and poly(tetrathiafulvalenes), elec. conductivity and magnetic properties in relation to)
IT Polymers, properties
RL: PRP (Properties)
(tetrathiafulvalene group-containing, elec. conductivity and magnetic properties of, ESR study of)
IT **68125-55-3 127030-61-9 127030-62-0**
127583-97-5
RL: PRP (Properties)
(elec. conductivity and magnetic properties of, ESR study of)

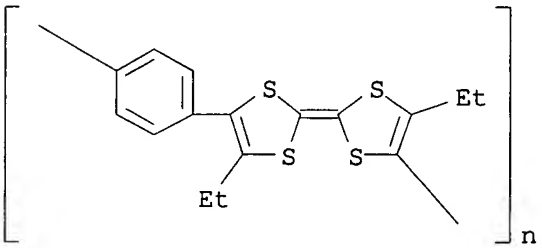
IT 7553-56-2, Iodine, miscellaneous
RL: MSC (Miscellaneous)
(**polyaniline** and poly(tetrathiafulvalenes) doped with, elec. conductivity of)
IT **25233-30-1, Polyaniline**
RL: PRP (Properties)
(with leucoemeraldine structure, elec. conductivity and magnetic properties of, ESR study of)
IT **68125-55-3 127030-61-9 127030-62-0**
RL: PRP (Properties)
(elec. conductivity and magnetic properties of, ESR study of)
RN 68125-55-3 HCAPLUS
CN Poly(1,3-dithiol-4-yl-2-ylidene-1,3-dithiol-4-yl-2-ylidene-1,4-phenylene) (9CI) (CA INDEX NAME)



RN 127030-61-9 HCAPLUS
CN Poly[(5-methyl-1,3-dithiol-4-yl-2-ylidene)(5-methyl-1,3-dithiol-4-yl-2-ylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



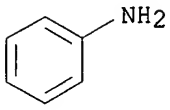
RN 127030-62-0 HCAPLUS
CN Poly[(5-ethyl-1,3-dithiol-4-yl-2-ylidene)(5-ethyl-1,3-dithiol-4-yl-2-ylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



IT **25233-30-1, Polyaniline**
RL: PRP (Properties)
(with leucoemeraldine structure, elec. conductivity and magnetic properties of, ESR study of)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

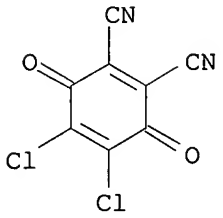
CRN 62-53-3
CMF C6 H7 N



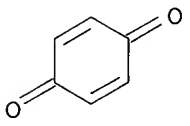
L104 ANSWER 24 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1993:571703 HCAPLUS
DN 119:171703
ED Entered STN: 16 Oct 1993
TI Polymer charge transfer complex
IN Oosawa, Toshuki; Yoshino, Katsumi
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01B001-12
ICS C08G061-12; C08G073-00; C08L065-00; C08L079-00
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 37
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05047211	A2	19930226	JP 1991-333443	19911217
PRAI	JP 1991-73720		19910314		

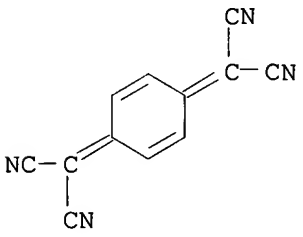
AB The complex contains an intermol. charge transfer complex comprising an organic acceptor and an organic donor containing an elec. conductive polymer material with N in a main **chain**.
ST polymer charge transfer complex; elec conductive polymer complex nitrogen
IT Electric conductors, polymeric
(charge transfer complexes for)
IT **84-58-2D**, Dichlorodicyano-p-benzoquinone, complexes, with nitrogen-containing polymers **106-51-4D**, p-Benzoquinone, complexes, with nitrogen-containing polymers **1518-16-7D**, complexes, with nitrogen-containing polymers **25233-30-1D**, **Polyaniline**, quinone derivs. complexes 30604-81-0D, tetracyanoquinodimethane complexes
RL: USES (Uses)
(organic elec. conductor containing)
IT **84-58-2D**, Dichlorodicyano-p-benzoquinone, complexes, with nitrogen-containing polymers **106-51-4D**, p-Benzoquinone, complexes, with nitrogen-containing polymers **1518-16-7D**, complexes, with nitrogen-containing polymers **25233-30-1D**, **Polyaniline**, quinone derivs. complexes
RL: USES (Uses)
(organic elec. conductor containing)
RN 84-58-2 HCAPLUS
CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



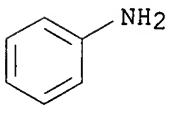
RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L104 ANSWER 25 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1993:263541 HCAPLUS
DN 118:263541
ED Entered STN: 26 Jun 1993
TI Electrochromic optical switching device
IN Lampert, Carl M.; Visco, Steven J.
PA University of California, USA

SO U.S., 9 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM G02F001-153
NCL 359269000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 29
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5142406	A	19920825	US 1990-606063	19901030
	US 5442478	A	19950815	US 1992-872830	19920423
PRAI	US 1990-606063		19901030		

AB Electrochromic cells are described which comprise an electrochromic electrode coupled via an ion-transporting elec. insulating separator with a counter electrode formed from a reversibly polymerizable compound described by the general formula (RSy)n in the charged state (y = 1-6; n = 2-1,000,000; and R = ≥1 of the same or different C1-20 aliphatic or aromatic organic moieties which may include ≥1 O, S, or N heteroatoms when R comprises ≥1 aromatic rings or ≥1 O, S, N, or F atoms associated with the **chain** when R comprises an aliphatic **chain**, aliphatic **chains** may be linear, branched, saturated or unsatd., and either aliphatic **chains** or aromatic rings may have substituents). Electrochromic devices employing the cells are also described.

ST organosulfur compd electrode electrochromic cell; reversible polymn electrode electrochromic cell

IT Electric contacts
(for electrochromic devices, organosulfur compound-containing)

IT Optical imaging devices
(electrochromic, with organosulfur compds. counter electrodes)

IT Ladder polymers
RL: USES (Uses)
(phenothiazines, electrochromic cells with electrochromic electrodes from, and organosulfur compound counter electrodes)

IT Polymers, uses
RL: USES (Uses)
(phosphazene group-containing, methoxyethoxy)ethoxy, electrochromic cells with separators from)

IT 1072-71-5, 2,5-Dimercapto-1,3,4-thiadiazole
RL: USES (Uses)
(electrochromic cells with counter electrodes containing)

IT 61-73-4, Methylene blue 84-47-9, 2-tert-Butylanthraquinone 84-65-1, Anthraquinone 95-53-4, properties 110-86-1, Pyridine, properties 119-93-7, 4,4'-Diamino-3,3'-dimethylbiphenyl 12030-48-7, Iridium monoxide 12030-49-8, Iridium dioxide 12036-35-0, Rhodium oxide (Rh2O3) 12054-48-7, Nickel hydroxide (Ni(OH)2) 12137-18-7, Rhodium monoxide 13463-67-7, Titanium dioxide, uses 13601-18-8D, solid solution with ferric ferrocyanide 14038-43-8, Ferric ferrocyanide (Fe4(Fe(CN)6)-3) 14038-43-8D, solid solution with lithium ferrocyanide 15546-75-5, 5,10-Dihydro-5,10-dimethylphenazine 18933-05-6, Manganese hydroxide (Mn(OH)2) **25233-30-1**, **Polyaniline** 25233-34-5, Polythiophene **31366-25-3**, Tetrathiafulvalene 36118-45-3, Pyrazoline 36490-78-5 46040-54-4 54968-01-3, Iridium hydroxide (Ir(OH)3) 56321-86-9, Ruthenium hydroxide 59458-40-1, Gold tungsten oxide 79079-35-9 101178-33-0 116066-80-9, Osmium hydroxide 142448-10-0, Rhodium hydroxide 147657-45-2, Platinum tungsten oxide
RL: USES (Uses)

(electrochromic cells with electrochromic electrodes from, and organosulfur compound counter electrodes)

IT 1304-76-3, Bismuth oxide (Bi2O3), properties 1307-96-6, Cobalt monoxide, properties 1308-38-9, Chromium oxide (Cr2O3), properties 1309-60-0, Lead dioxide 1313-27-5, Molybdenum trioxide, properties 1313-96-8, Niobium oxide (Nb2O5) 1313-99-1, Nickel monoxide, properties 1314-35-8, Tungsten trioxide, properties 1314-62-1, Vanadium oxide (V2O5), properties 1317-36-8, Lead monoxide, properties 1317-38-0, Copper oxide (CuO), properties 1343-93-7 1344-43-0, Manganese monoxide, properties 1344-54-3, Titanium oxide (Ti2O3) 6159-05-3
RL: PRP (Properties)
(electrochromic cells with electrochromic electrodes from, and organosulfur compound counter electrodes)

IT 7440-74-6, Indium, uses
RL: USES (Uses)
(electrochromic cells with electrodes based on zinc monoxide doped with, and organosulfur compds. counter electrodes)

IT 18282-10-5, Tin dioxide
RL: USES (Uses)
(electrochromic cells with electrodes based on, and organosulfur counter electrodes)

IT 7440-36-0, Antimony, uses 7782-41-4, Fluorine, uses
RL: USES (Uses)
(electrochromic cells with electrodes from tin oxide doped with, and organosulfur compound counter electrodes)

IT 1312-43-2, Indium oxide (In2O3) 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses 7440-16-6, Rhodium, uses 7440-22-4, Silver, uses 7440-32-6, Titanium, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 12014-13-0, Cadmium tin oxide (CdSnO3) 12185-56-7, Cadmium stannate (Cd2SnO4) 12597-68-1, Stainless steel, properties 12597-71-6, Brass, uses 22205-45-4, Copper sulfide (Cu2S) 25583-20-4, Titanium mononitride 37271-26-4, Titanium oxynitride
RL: USES (Uses)
(electrochromic cells with electrodes from, and organosulfur compound counter electrode)

IT 1306-19-0, Cadmium monoxide, properties 1314-13-2, Zinc monoxide, properties
RL: PRP (Properties)
(electrochromic cells with electrodes from, and organosulfur compound counter electrode)

IT 1314-61-0, Tantalum oxide (Ta2O5) 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 7783-40-6, Magnesium difluoride 9002-89-5, Polyvinyl alcohol 20281-00-9, Cesium oxide (Cs2O) 25322-68-3 25322-69-4, Polypropylene glycol 113443-18-8, Silicon monoxide
RL: USES (Uses)
(electrochromic cells with separators from)

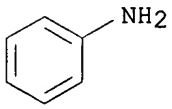
IT 33454-82-9, Lithium triflate
RL: USES (Uses)
(electrochromic devices with layers containing, with organosulfur compound counter electrodes)

IT **25233-30-1, Polyaniline 31366-25-3,** Tetrathiafulvalene
RL: USES (Uses)
(electrochromic cells with electrochromic electrodes from, and organosulfur compound counter electrodes)

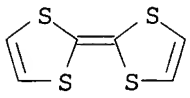
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N

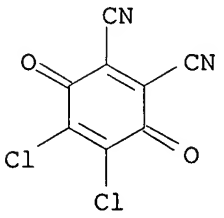


RN 31366-25-3 HCAPLUS
CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



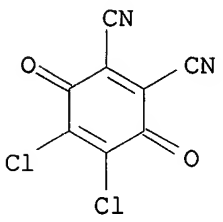
L104 ANSWER 26 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:592468 HCAPLUS
DN 117:192468
ED Entered STN: 15 Nov 1992
TI New **polyaniline** derivatives: poly(4,4'-diphenylamine methylenes) and poly(4,4'-diphenylimine methines)
AU Chen, Wen Chang; Jenekhe, Samson A.
CS Dep. Chem. Eng., Univ. Rochester, Rochester, NY, 14627-0166, USA
SO Macromolecules (1992), 25(22), 5919-26
CODEN: MAMOBX; ISSN: 0024-9297
DT Journal
LA English
CC 35-5 (Chemistry of Synthetic High Polymers)
AB New **polyaniline** derivs. consisting of alternating p-phenylene rings and N and C atoms in the backbone are prepared and characterized as model systems for the study of the role of the N atom on the structure and electronic and optical properties of polyanilines. The new polymers, poly(4,4'-diphenylamine methylenes) and poly(4,4'-diphenylimine methines), are analogs of and isoelectronic with leucoemeraldine and pernigraniline oxidation states of **polyaniline**, resp. The substitution of an amine N atom of polyleucoemeraldine with a methylene C atom results in an increase of the π-π^* optical band gap. The substitution of an imine N atom of polypernigraniline with a methine C atom results in a significant reduction of the oscillator strength of the π-π^* absorption band near 2.2 eV. This optical band gap in the electronic spectra of the poly(4,4'-diphenylimine methines) varies from 540 nm (2.3 eV) to 687 nm (1.8 eV) depending on the side-group substitution at the methine C atom. One of the poly(4,4'-diphenylimine methines) exhibits a very dramatic solvatochromism: it is red in DMF or NMP (λmax = 488 nm) and dark blue in THF (λmax = 639 nm). The solvatochromism of these **polyaniline** derivs. is explained by conformational changes due to solvent quality. The new **polyaniline** derivs. are promising model systems for the exptl. and theor. understanding of the electronic structure and phys. properties of polyanilines and other ring-containing **conjugated** polymers.
ST structure optical property polydiphenylaminemethylene polydiphenylimidemethine; solvatochromism optical band gap polyamine
IT Polymerization

(of diphenylamine with aldehydes)
IT Dehydrogenation
(of poly(diphenylamine methylenes), by DDQ)
IT Solvatochromism
(of **polyaniline** derivs., structure effect on)
IT Polyamines
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and optical properties of, with **polyaniline**-like structure)
IT **Chains**, chemical
(structure and conformation of, of **polyaniline** derivs., optical properties in relation to)
IT Energy level, band structure
(gap, of **polyaniline** derivs., structure effect on)
IT **84-58-2**, 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone
RL: USES (Uses)
(dehydrogenation of poly(diphenylamine methylenes) by)
IT 1333-74-0
RL: USES (Uses)
(dehydrogenation, of poly(diphenylamine methylenes), by DDQ)
IT 120515-37-9DP, dehydrogenated 120515-37-9P 143330-75-0DP, dehydrogenated 143330-75-0P 143330-76-1DP, dehydrogenated 143330-76-1P 143330-77-2DP, dehydrogenated 143330-77-2P 143330-81-8DP, dehydrogenated 143330-81-8P 143330-82-9DP, dehydrogenated 143330-82-9P 143330-83-0DP, dehydrogenated 143330-83-0P 143330-84-1DP, dehydrogenated 143330-84-1P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and optical properties of)
IT **84-58-2**, 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone
RL: USES (Uses)
(dehydrogenation of poly(diphenylamine methylenes) by)
RN 84-58-2 HCAPLUS
CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI, 9CI) (CA INDEX NAME)

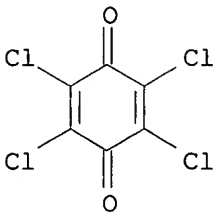


L104 ANSWER 27 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:450656 HCAPLUS
DN 115:50656
ED Entered STN: 10 Aug 1991
TI X-ray photoelectron spectroscopy studies of deprotonated polypyrrole and its complexes
AU Kang, E. T.; Neoh, K. G.; Ong, Y. K.; Tan, K. L.; Tan, B. T. G.
CS Dep. Chem. Eng., Natl. Univ. Singapore, Singapore, 0511, Singapore
SO Polymer (1991), 32(8), 1354-60
CODEN: POLMAG; ISSN: 0032-3861
DT Journal
LA English

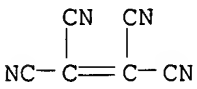
CC 36-2 (Physical Properties of Synthetic High Polymers)
AB Oxidized polypyrrole (I) was subjected to deprotonation by 0.5 M NaOH, and the interactions of the deprotonated pyrrolylium N with various protonic acids and organic electron acceptors were studied by XPS. XPS data showed similar spectra to those observed for the imine N in the **emeraldine** oxidation state of **polyaniline**. However, the cyclic acid/base treatments of the deprotonated I were not completely reversible. The interactions with the halobenzoquinones, such as o-, p-chloranil and o-bromanil, resulted in the formation of pos. charged N and the halogen and benzoquinone anions. The charge transfer behavior of the deprotonated pyrrolylium N towards acid protonation, and doping by the organic acceptors, together with the charge neutrality considerations, suggested the presence of localized unit pos. charge on the pyrrolylium nitrogens.
ST deprotonated polypyrrole acid complex XPS
IT Acids, compounds
RL: PRP (Properties)
(oxidized polypyrrole complexes, XPS study of, structure in relation to)
IT **Chains**, chemical
(structure of, of oxidized polypyrrole and its complexes with protonic acids, XPS spectra in relation to)
IT **84-58-2D**, DDQ, oxidized polypyrrole complexes **118-75-2D**, p-Chloranil, oxidized polypyrrole complexes **670-54-2D**, TCNE, oxidized polypyrrole complexes 2435-53-2D, o-Chloranil, oxidized polypyrrole complexes 2435-54-3D, o-Bromanil, oxidized polypyrrole complexes 7553-56-2D, Iodine, polypyrrole complexes 7647-01-0D, Hydrochloric acid, oxidized polypyrrole complexes 7664-93-9D, Sulfuric acid, oxidized polypyrrole complexes 10035-10-6D, Hydrobromic acid, oxidized polypyrrole complexes 30604-81-0D, Polypyrrole, oxidized, complexes with protonic acids
RL: PROC (Process)
(XPS study of, structure in relation to)
IT **84-58-2D**, DDQ, oxidized polypyrrole complexes **118-75-2D**, p-Chloranil, oxidized polypyrrole complexes **670-54-2D**, TCNE, oxidized polypyrrole complexes
RL: PROC (Process)
(XPS study of, structure in relation to)
RN 84-58-2 HCAPLUS
CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 118-75-2 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)



RN 670-54-2 HCAPLUS
CN Ethenetetracarbonitrile (6CI, 8CI, 9CI) (CA INDEX NAME)



L104 ANSWER 28 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:139385 HCAPLUS
DN 114:139385
ED Entered STN: 19 Apr 1991
TI Surface functionalized and derivatized conducting polymers and their use in biosensors
IN Guiseppi-Elie, Anthony
PA Allage Associates, Inc., USA
SO PCT Int. Appl., 48 pp.
CODEN: PIXXD2
DT Patent
LA English
IC C08F008-00; C08G085-00
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 38
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9010655	A2	19900920	WO 1990-US1411	19900313
	WO 9010655	A3	19901018		
	W: CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, IT, LU, NL, SE				
	CA 2048692	AA	19900914	CA 1990-2048692	19900313
PRAI	US 1989-322670		19890313		

AB Electroactive or optoactive polymeric substrates are surface-modified and **conjugated** with an indicator reagent. The **conjugate** can be used as a sensor for detection of analytes. A film of an aniline-3-amino-4-methylbenzoic acid copolymer was created on the surface of an interdigitated microelectrode array by oxidative electrosynthesis. Amino groups were introduced into the surface film by reaction with 1:1 H2SO4:NHO3 followed by reduction with aqueous SnCl2. Reaction with p-benzoquinone produced an activated film surface to which glucose oxidase was covalently attached. Using a spectrometer at 460 nm, the unmodified film had an activity of 0.8 mV/cm2 while the modified film had an activity of 75 mV/cm2.
ST electroactive polymer indication **conjugate** sensor; optoactive polymer indicator **conjugate** sensor; sensor **polyaniline**

glucose oxidase **conjugate**; polymer electroactive optoactive biomol **conjugate**

IT Biosensors
(biomols. **conjugated** with electro- or optoactive polymers for)

IT Antibodies
Antigens
Hormones
RL: ANST (Analytical study)
(**conjugates** with electro- or optoactive polymers, sensors containing, for analyte determination)

IT Polymers, biological studies
RL: BIOL (Biological study)
(electro- or optoactive, biomols. covalently coupled to, sensors containing)

IT Polyamines
RL: ANST (Analytical study)
(aromatic, surface-activated, **conjugates** with biomols., sensors containing, analyte determination in relation to)

IT Coenzymes
Deoxyribonucleic acids
Enzymes
Ribonucleic acids
RL: ANST (Analytical study)
(**conjugates**, with electro- or optoactive polymers, sensors containing for analyte determination)

IT 132827-60-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(electrosynthesis of, an interdigitated microelectrode assay, in manufacture of glucose oxidase-containing sensor)

IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, biological studies
111-30-8, Glutaraldehyde 151-51-9, Carbodiimide
RL: ANST (Analytical study)
(linker, in preparation of electro- or optoactive polymer-biomol. **conjugates** for biosensors)

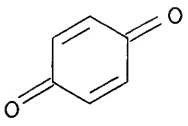
IT 9001-37-0D, Glucose oxidase, **conjugate** with **polyaniline**
RL: USES (Uses)
(sensor containing)

IT 25067-58-7D, Polyacetylene, surface-activated, **conjugates** with biomols. **25233-30-1D**, **Polyaniline**, surface-activated, **conjugates** with biomols. 25233-34-5D, Polythiophene, surface-activated, **conjugates** with biomols. 30604-81-0D, Polypyrrole, surface-activated, **conjugates** with biomols.
RL: ANST (Analytical study)
(sensors containing, for analyte determination)

IT 146-14-5D, FAD, **conjugate**
RL: ANST (Analytical study)
(with **polyaniline** film on interdigitated microelectrode assay)

IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, biological studies
RL: ANST (Analytical study)
(linker, in preparation of electro- or optoactive polymer-biomol. **conjugates** for biosensors)

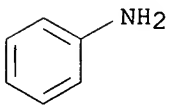
RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



IT **25233-30-1D, Polyaniline**, surface-activated, **conjugates** with biomols.
RL: ANST (Analytical study)
(sensors containing, for analyte determination)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

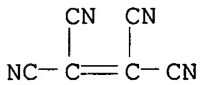
CM 1

CRN 62-53-3
CMF C6 H7 N



L104 ANSWER 29 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1990:140237 HCAPLUS
DN 112:140237
ED Entered STN: 13 Apr 1990
TI Synthesis and characterization of electrically conducting **polyaniline**-TCNE complexes
AU Neoh, K. G.; Kang, E. T.; Khor, S. H.; Tan, K. L.
CS Dep. Chem. Eng., Natl. Univ. Singapore, Singapore, 0511, Singapore
SO Journal of Polymer Science, Part A: Polymer Chemistry (1989), 27(13), 4365-74
CODEN: JPACEC; ISSN: 0887-624X
DT Journal
LA English
CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 35, 76
AB **Polyaniline** (I)-tetracyanoethylene (TCNE) complexes can be synthesized either from **emeraldine** base or **emeraldine** HCl by a relatively simple method. The complexes demonstrate greater stability than the **emeraldine** HCl at elevated temps. and under high current densities. The elec. conductivity of the complexes synthesized from **emeraldine** base can be varied from <10-6 to 0.2 S/cm by varying the amount of TCNE incorporated. The complexes synthesized from **emeraldine** hydrochloride are slightly more conductive than the starting **emeraldine** HCl. In both types of complexes, it appears that electron transfer between I and TCNE has occurred resulting in the formation of some pos. charged I N and TCNE anions.
ST **polyaniline** tetracyanoethylene complex elec cond
IT Electric conductivity and conduction
(of **polyaniline**-tetracyanoethylene complexes, prepared from **emeraldine** base and **emeraldine** hydrochloride, structure and thermal stability in relation to)

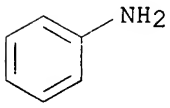
IT **Chains**, chemical
(structure of, of **polyaniline**-tetracyanoethylene complexes, prepared from **emeraldine** base and **emeraldine** hydrochloride, elec. conductivity in relation to)
IT **670-54-2DP**, Tetracyanoethylene, complexes with **polyaniline**
25233-30-1DP, **Polyaniline**, tetracyanoethylene complexes
RL: PRP (Properties); PREP (Preparation)
(elec. conductivity of, prepared from **emeraldine** base and **emeraldine** hydrochloride, structure and thermal stability in relation to)
IT **670-54-2DP**, Tetracyanoethylene, complexes with **polyaniline**
25233-30-1DP, **Polyaniline**, tetracyanoethylene complexes
RL: PRP (Properties); PREP (Preparation)
(elec. conductivity of, prepared from **emeraldine** base and **emeraldine** hydrochloride, structure and thermal stability in relation to)
RN 670-54-2 HCAPLUS
CN Ethenetetracarbonitrile (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L104 ANSWER 30 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1989:408077 HCAPLUS
DN 111:8077
ED Entered STN: 08 Jul 1989
TI **Polyaniline**: doping, structure and derivatives
AU Ray, A.; Asturias, G. E.; Kershner, D. L.; Richter, A. F.; MacDiarmid, A. G.; Epstein, A. J.
CS Dep. Chem., Univ. Pennsylvania, Philadelphia, PA, 19104-6323, USA
SO Synthetic Metals (1989), 29(1), E141-E150
CODEN: SYMEDZ; ISSN: 0379-6779
DT Journal
LA English
CC 36-2 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 76
AB Redox titration results and electronic spectral evidence show that the oxidation
state of the **emeraldine** base form of **polyaniline** (I)
can vary depending on whether its synthesis is performed in the presence

or absence of air. Chemical doping of leucoemeralidine, the completely reduced form of I, to selected oxidation states can be accomplished by a variety of oxidizing agents such as Cl2, NOPF6, FeCl3, SnCl4, and TCNQ.

ST **polyaniline** doping structure oxidn state

IT Electric conductivity and conduction
(four-probe, of doped **polyaniline**, effect of oxidation state on)

IT **Chains**, chemical
(structure of, of **polyaniline**, during doping and oxidation)

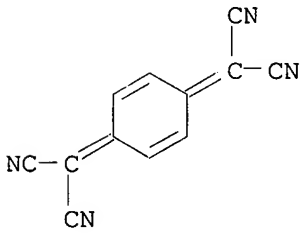
IT **1518-16-7**, TCNQ 7646-78-8, Tin chloride (SnCl4), uses and miscellaneous 7705-08-0, Iron chloride (FeCl3), uses and miscellaneous 7782-50-5, Chlorine, uses and miscellaneous 16921-91-8
RL: PRP (Properties)
(dopants, for **polyaniline**, structure and elec. conductivity in relation to)

IT **25233-30-1, Polyaniline**
RL: PRP (Properties)
(doping, structure, and oxidation states of)

IT **1518-16-7**, TCNQ
RL: PRP (Properties)
(dopants, for **polyaniline**, structure and elec. conductivity in relation to)

RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



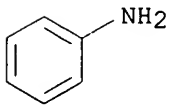
IT **25233-30-1, Polyaniline**
RL: PRP (Properties)
(doping, structure, and oxidation states of)

RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



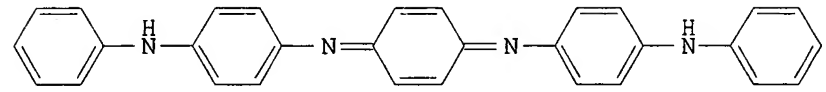
L104 ANSWER 31 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

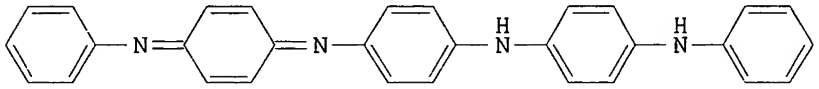
AN 1989:15351 HCAPLUS

DN 110:15351

ED Entered STN: 06 Jan 1989

TI Optical properties of model compounds of **polyaniline**
AU Yang, Sze Ming; Chen, Hsin Juan; Lin, Jiann Shen
CS Dep. Chem. Eng., Natl. Cent. Univ., Chungli, 54320, Taiwan
SO Journal of the Chinese Chemical Society (Taipei, Taiwan) (1988), 35(1), 39-44
CODEN: JCCTAC; ISSN: 0009-4536
DT Journal
LA English
CC 73-4 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 36
GI


Ia

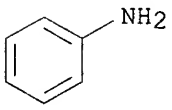

I b

AB The UV and visible spectra of 6 model compds. were studied. These compds. can be considered as models of **polyaniline** in the reduced, cation radical, partially oxidized, and oxidized forms. After treatment of a mixture of equal molar quantities of the reduced form (di-Ph p-phenylenediamine-DPPD) and the oxidized form (quinone diimine-QDIM) with acid, the following reaction was observed: DPPD + QDIm + 2H+ = 2DPPD+. After similar treatment of the partially oxidized form (I) with acid, the radical cation salt formed. The UV and visible spectra of **polyaniline** in the reduced form, oxidized form and conductive form are similar to the spectra of DPPD, QDIM and DPPD+ or radical cation salt of I, resp. Probably the **polyaniline** synthesized by chemical oxidation of PhNH2 consists of oxidized and reduced repeat units. Upon protonation a redox reaction (or electron rearrangement) occurs and forms delocalized radical cations (polarons) in the polymer **chain** which are highly conductive.
ST **polyaniline** model compd UV visible; diphenyl phenyleneddiamine UV visible; quinone diimine UV visible
IT Electron spin resonance
Ultraviolet and visible spectra
(of **polyaniline** model compds.)
IT 74-31-7, Diphenyl p-phenylenediamine 6246-98-6 19099-70-8 19099-71-9 80323-66-6 80323-67-7 117992-63-9
RL: PRP (Properties)
(UV and visible spectra of)
IT **25233-30-1, Polyaniline**
RL: PRP (Properties)
(UV in visible spectra of model compds. of)
IT 19099-67-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrolysis of, di(dianilino)terephthalic acid formation from)
IT 101-54-2, p-Aminodiphenylamine
RL: RCT (Reactant); RACT (Reactant or reagent)

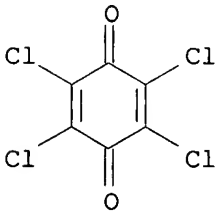
(reaction of, with Et succinylosuccinate, dihydrodi(dianilino)terephtha lic acid di-Et ester formation from)
IT 19099-62-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with chloranil, di(dianilino)terephthalic acid di-Et ester formation from)
IT **118-75-2**, Chloranil, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dihydrodi(dianilino)terephthalic acid di-Et ester, di(dianilino)terephthalic acid di-Et ester formation from)
IT 1317-36-8, Lead monoxide, reactions 7727-54-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with tetraanilinobenzene, oxidized form of tetraanilinobenzene formation from)
IT 19099-69-5
RL: PRP (Properties)
(sublimation of, tetraanilinobenzene formation from)
IT **25233-30-1, Polyaniline**
RL: PRP (Properties)
(UV in visible spectra of model compds. of)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



IT **118-75-2**, Chloranil, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dihydrodi(dianilino)terephthalic acid di-Et ester, di(dianilino)terephthalic acid di-Et ester formation from)
RN 118-75-2 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)



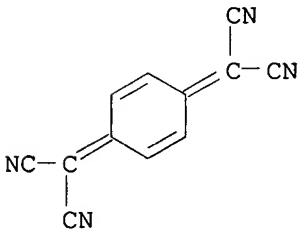
L104 ANSWER 32 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1987:59926 HCAPLUS
DN 106:59926
ED Entered STN: 21 Feb 1987
TI MIS diode

IN Tsunoda, Makoto; Yanagiura, Satoshi; Eto, Shohei
PA Mitsubishi Electric Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01L029-28
ICS H01L029-94; H01L031-10
CC 76-3 (Electric Phenomena)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 61163659	A2	19860724	JP 1985-3601	19850112
PRAI JP 1985-3601		19850112		

AB In a method for fabricating an MIS diode consisting of an electrode conductor layer, a semiconductor layer, an insulative organic-compound layer, and an electrode metal layer, the semiconductor layer is comprised of a π- **conjugation** polymer prepared by electrolytic polymerization, and the insulative layer has an electron-accepting and/or electron-donating group(s).

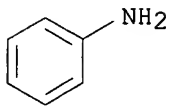
ST MIS diode electrolytic polymn
IT Diodes
(MIS, fabrication of)
IT **1518-16-7**, TCNQ 9003-47-8, Polyvinylpyridine 25067-54-3, Polyfuran 25067-59-8, Poly(vinyl carbazole) **25233-30-1**, **Polyaniline** 25233-34-5, Polythiophene 25962-03-2 26023-46-1, Poly(p-phenylene-1,3,4-oxadiazole) 30604-81-0, Polypyrrole 72945-66-5, Poly(N-methylpyrrole) 82451-56-7, Polyazulene
RL: TEM (Technical or engineered material use); USES (Uses)
(films, for MIS diodes)
IT **1518-16-7**, TCNQ **25233-30-1**, **Polyaniline**
RL: TEM (Technical or engineered material use); USES (Uses)
(films, for MIS diodes)
RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N

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                 31366-25-3/BI)
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L5          4093 SEA FILE=REGISTRY ABB=ON  L4 AND 1/NR AND 2/O
L11        24589 SEA FILE=REGISTRY ABB=ON  591.49.52/RID
L12         5505 SEA FILE=REGISTRY ABB=ON  L11 AND 2/O
L13         1892 SEA FILE=REGISTRY ABB=ON  L12 AND 2/NR
L16          350 SEA FILE=REGISTRY ABB=ON  L4 AND CYANO AND 1/NR
L17          259 SEA FILE=REGISTRY ABB=ON  L16 AND 2-4/N
L21        81850 SEA FILE=REGISTRY ABB=ON  1839.6.36/RID
L22         5957 SEA FILE=REGISTRY ABB=ON  L21 AND 3/NR AND (1/O OR 2/N)
L23           84 SEA FILE=REGISTRY ABB=ON  L22 AND DICYANO
L24           44 SEA FILE=REGISTRY ABB=ON  L22 AND DINITRIL?
L25          121 SEA FILE=REGISTRY ABB=ON  L23 OR L24
L27          134 SEA FILE=REGISTRY ABB=ON  L22 AND 1/O AND OXO
L28          253 SEA FILE=REGISTRY ABB=ON  L25 OR L27
L31         3910 SEA FILE=REGISTRY ABB=ON  16.145.6/RID
L32        79933 SEA FILE=REGISTRY ABB=ON  (DINITRIL? OR DICYANO?)
L33          210 SEA FILE=REGISTRY ABB=ON  L31 AND L32
L34              STR
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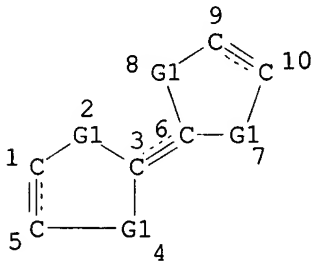


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VAR G1=S/SE/TE
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  10

STEREO ATTRIBUTES: NONE
L36              SCR 1839
L38              SCR 2022
L39              SCR 1935 AND 2019
L40              SCR 1926 AND 2019
L42              SCR 2127
L44              SCR 1842
L46              SCR 134 OR 1773
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L48 3373 SEA FILE=REGISTRY SSS FUL L34 AND L36 AND (L38 OR L39 OR L40) AND L46 NOT (L42 OR L44)
L52 167 SEA FILE=REGISTRY ABB=ON 591.49.33/RID
L53 77 SEA FILE=REGISTRY ABB=ON L52 AND (DICYANO? OR DINITRIL?)
L56 28 SEA FILE=REGISTRY ABB=ON 2508.17.32/RID
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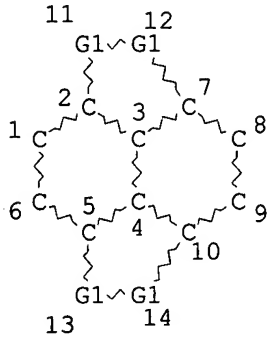
L61 STR



VAR G1=S/SE/TE
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE
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L71 7 SEA FILE=REGISTRY ABB=ON L66 AND 2/NR AND (2/TE OR (1/TE AND (1/S OR 1/SE)))
L74 363 SEA FILE=REGISTRY ABB=ON 46.162.2/RID
L75 55 SEA FILE=REGISTRY ABB=ON L74 AND 2/NR AND (2/SE OR (1/SE AND (1/S OR 1/TE)))
L76 7 SEA FILE=REGISTRY ABB=ON C6N4/MF
L77 8 SEA FILE=REGISTRY ABB=ON C10N6/MF
L78 10 SEA FILE=REGISTRY ABB=ON (L76 OR L77) NOT 1-20/NR
L79 24096 SEA FILE=HCAPLUS ABB=ON L5
L80 12745 SEA FILE=HCAPLUS ABB=ON L13
L81 5026 SEA FILE=HCAPLUS ABB=ON L17
L82 381 SEA FILE=HCAPLUS ABB=ON L28
L83 85 SEA FILE=HCAPLUS ABB=ON L53 OR L58
L84 3342 SEA FILE=HCAPLUS ABB=ON L78
L85 74 SEA FILE=HCAPLUS ABB=ON L33
L86 3409 SEA FILE=HCAPLUS ABB=ON L48
L87 555 SEA FILE=HCAPLUS ABB=ON L63
L88 116 SEA FILE=HCAPLUS ABB=ON L67 OR L71 OR L75
L89 43572 SEA FILE=HCAPLUS ABB=ON (L79 OR L80 OR L81 OR L82 OR L83 OR L84 OR L85 OR L86 OR L87 OR L88)
L90 169 SEA FILE=HCAPLUS ABB=ON L89 AND ?POLYMER?(4A)?CONJUGAT?
L92 21 SEA FILE=HCAPLUS ABB=ON L89 AND (RESIN# OR ?POLYMER?)(6A)?CONJUGAT?(5A)?CHAIN?

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L102         18 SEA FILE=HCAPLUS ABB=ON  L101 AND CONJUGAT?
L103         19 SEA FILE=HCAPLUS ABB=ON  L101 AND ?CHAIN?
L104         32 SEA FILE=HCAPLUS ABB=ON  (L92 OR L102 OR L103) NOT L92
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                LIGHT?(3A)?EMIT?)
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                L104)
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16 More references – structures with EL, etc

=> d l106 1-16 all hitstr

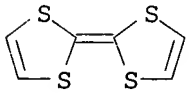
(Ans. w/ EL not already printed)

L106 ANSWER 1 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:3414 HCAPLUS
DN 140:67409
ED Entered STN: 04 Jan 2004
TI **Light emitting** device and manufacturing method therefor
IN Seo, Satoshi; Yamazaki, Hiroko applicants
PA Japan
SO U.S. Pat. Appl. Publ., 20 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM H05B033-00
NCL 313506000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 74, 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004000866	A1	20040101	US 2003-456609	20030609
	JP 2004087477	A2	20040318	JP 2003-183327	20030626
	EP 1376714	A2	20040102	EP 2003-14751	20030627
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	CN 1469691	A	20040121	CN 2003-147892	20030627
PRAI	JP 2002-189998	A	20020628		

AB A **light emitting** device having the top emission structure is described comprising a first electrode (specifically, a wiring material such as Ti or Al) having a light-shielding property or reflectivity; a conductive polymer layer formed by applying a conductive polymer material onto the first electrode; an **electroluminescence** film formed in contact with the conductive polymer layer; and a light-transmissive second electrode formed on the **electroluminescence** film, in which the conductive polymer layer is formed of materials including a redox polymer etc., while being free of problems regarding work function. The **light emitting** element having a top emission structure can be easily manufactured without considering an ionization potential of an electrode (particularly an electrode in contact with a substrate).
ST **light emitting** device top emission fabrication
IT Polyanilines
RL: DEV (Device component use); USES (Uses)
(conductive polymer, **emeraldine**-base; **light emitting** device having top emission structure)

IT **Electroluminescent** devices
(displays; **light emitting** device having top emission structure)
IT **Luminescent** screens
(**electroluminescent; light emitting** device having top emission structure)
IT Conducting polymers
Electroluminescent devices
(**light emitting** device having top emission structure)
IT 7789-24-4, Lithium fluoride (LiF), uses
RL: DEV (Device component use); USES (Uses)
(cathode; **light emitting** device having top emission structure)
IT **31366-25-3**, Tetrathiafulvalene 50851-57-5 126213-51-2, Polyethylene dioxythiophene
RL: DEV (Device component use); USES (Uses)
(conductive polymer, **emeraldine**-base; **light emitting** device having top emission structure)
IT 7429-90-5, Aluminum, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-22-4, Silver, uses 7440-25-7, Tantalum, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 12033-62-4, Tantalum nitride 12705-37-2, Chromium nitride 25583-20-4, Titanium nitride 25658-42-8, Zirconium nitride 37245-81-1, Molybdenum nitride 37359-53-8, Tungsten nitride
RL: DEV (Device component use); USES (Uses)
(electrode; **light emitting** device having top emission structure)
IT 123847-85-8, α-NPD
RL: DEV (Device component use); USES (Uses)
(hole transporting layer; **light emitting** device having top emission structure)
IT 2085-33-8, Alq3
RL: DEV (Device component use); USES (Uses)
(**light emitting** layer; **light emitting** device having top emission structure)
IT **31366-25-3**, Tetrathiafulvalene
RL: DEV (Device component use); USES (Uses)
(conductive polymer, **emeraldine**-base; **light emitting** device having top emission structure)
RN 31366-25-3 HCAPLUS
CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



L106 ANSWER 2 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:892867 HCAPLUS
DN 139:388245
ED Entered STN: 14 Nov 2003
TI **Electroluminescent** devices in which **electroluminescent** structure excites a fluorescent material
IN Kathirgamanathan, Poopathy
PA Elam-T Limited, UK

SO PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C09K011-06
ICS H05B033-14; H01L051-20
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003093394	A1	20031113	WO 2003-GB1932	20030502

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI GB 2002-10203 A 20020503
OS MARPAT 139:388245
AB **Electroluminescent** devices are described which comprise an **electroluminescent** structure which **emits light** in the blue, purple/blue or UV section of the spectrum and a fluorescent layer comprising ≥1 fluorescent sections each of which sections incorporates a fluorescent material in which device **light emitted** by the **electroluminescent** structure excites a fluorescent material in the fluorescent layer causing **light** to be **emitted** by the fluorescent material.
ST **electroluminescent** device fluorescent layer excitation
IT Amines, uses
RL: DEV (Device component use); USES (Uses)
(aromatic, complexes, hole-transporting layer; **electroluminescent** devices in which **electroluminescent** structure excites fluorescent material)
IT **Electroluminescent** devices
(blue and UV; **electroluminescent** devices in which **electroluminescent** structure excites fluorescent material)
IT Fluorescent substances
(**electroluminescent** devices in which **electroluminescent** structure excites fluorescent material)
IT Polyanilines
RL: DEV (Device component use); USES (Uses)
(hole-transporting layer; **electroluminescent** devices in which **electroluminescent** structure excites fluorescent material)
IT 60-00-4D, EDTA, gadolinium complex 67-43-6D, DTPA, gadolinium complex 110-86-1D, Pyridine, metal complexes 869-52-3D, TTHA, gadolinium complex 1662-01-7D, metal complexes 7429-90-5D, Aluminum, complexes 7440-27-9D, Terbium, compds. 7440-29-1D, Thorium, compds. 7440-45-1D, Cerium, compds. 7440-53-1, Europium, uses 7440-53-1D, Europium, compds. 7440-54-2, Gadolinium, uses 7440-54-2D, Gadolinium, compds. 7440-65-5D, Yttrium, compds. 13291-61-7D, DCTA, gadolinium complex 14405-36-8 15133-54-7 21333-45-9 25387-93-3 63448-47-5
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** material; **electroluminescent**

devices in which **electroluminescent** structure excites fluorescent material)

IT 905-62-4 1217-45-4, 9,10-Dicyanoanthracene 2085-33-8, Alq3 2872-54-0 13978-85-3 15082-28-7 23467-27-8 28805-75-6, Cyanoanthracene 37407-37-7 50851-57-5 58280-31-2 67952-28-7 135804-06-7 138372-67-5, OXD-7 146162-54-1 148044-16-0 148896-39-3 150405-69-9, TAZ
RL: DEV (Device component use); USES (Uses)
(electron-transmitting material; **electroluminescent** devices in which **electroluminescent** structure excites fluorescent material)

IT 86-73-7D, 9H-Fluorene, derivs. 159-66-0D, 9,9'-Spirobi[9H-fluorene], derivs. **193-44-2** 5521-31-3D, derivs. 25067-59-8, Poly(vinylcarbazole) **25233-30-1**, **Polyaniline** **31366-25-3D**, derivs. 58328-31-7D, derivs. 65181-78-4, TPD **66946-48-3D**, derivs. 105389-36-4D, derivs. 123847-85-8, NPB 123847-85-8D, derivs. 123847-87-0D, derivs. 124729-98-2 142289-08-5D, derivs. 203642-12-0D, derivs. 214341-85-2D, derivs. 474974-61-3 474974-62-4
RL: DEV (Device component use); USES (Uses)
(hole-transporting layer; **electroluminescent** devices in which **electroluminescent** structure excites fluorescent material)

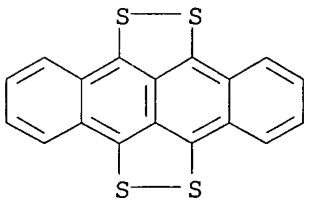
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; PATENT ABSTRACTS OF JAPAN 2000, V2000(06)
(2) Etchells, M; WO 0220692 A 2002 HCAPLUS
(3) Fuji Electric Co Ltd; GB 2333897 A 1999 HCAPLUS
(4) Gao, D; SOLID STATE COMMUNICATIONS 2002, V121(2-3), P145 HCAPLUS
(5) Kathirgamanathan, P; WO 0032717 A 2000 HCAPLUS
(6) Kathirgamanathan, P; WO 0044851 A 2000 HCAPLUS
(7) Kido, J; SCIENCE 1995, V267(5202), P1332 HCAPLUS
(8) Konishiroku Photo Ind; EP 1013740 A 2000 HCAPLUS
(9) Matsushita Denki Sangyo Kk; JP 2000277259 A 2000 HCAPLUS
(10) Minolta Co Ltd; JP 2000091078 A 2000 HCAPLUS
(11) Sumitomo Chemical Co; EP 1074600 A 2001 HCAPLUS
(12) XI-Cun, G; SYNTHETIC METALS 1999, V99(2), P127
(13) Zhu, W; SYNTHETIC METALS 1999, V111-112, P445

IT **193-44-2** **25233-30-1**, **Polyaniline** **31366-25-3D**, derivs. **66946-48-3D**, derivs.
RL: DEV (Device component use); USES (Uses)
(hole-transporting layer; **electroluminescent** devices in which **electroluminescent** structure excites fluorescent material)

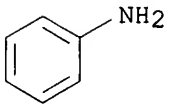
RN 193-44-2 HCAPLUS
CN Naphthaceno[5,6-cd:11,12-c'd']bis[1,2]dithiole (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



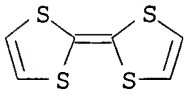
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

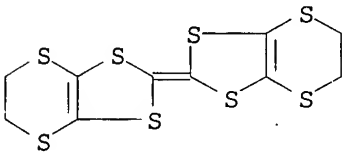
CRN 62-53-3
CMF C6 H7 N



RN 31366-25-3 HCAPLUS
CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



RN 66946-48-3 HCAPLUS
CN 1,3-Dithiolo[4,5-b][1,4]dithiin, 2-(5,6-dihydro-1,3-dithiolo[4,5-b][1,4]dithiin-2-ylidene)-5,6-dihydro- (9CI) (CA INDEX NAME)



L106 ANSWER 3 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:634128 HCAPLUS
DN 139:188104
ED Entered STN: 15 Aug 2003
TI Method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing
IN Kathirgamanathan, Poopathy
PA Elam-T Limited, UK
SO PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM H01L051-40
ICS H01L051-20; H05B033-12; H05B033-10; C09K011-06
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 76
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003067679	A1	20030814	WO 2003-GB542	20030206

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,
NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG

PRAI GB 2002-2997 A 20020208

AB Methods of forming an **electroluminescent** device are described which comprise depositing an **electroluminescent** material on a substrate by ink jet printing.

ST **electroluminescent** device fabrication ink jet printing

IT Ketones, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(1,3-diketones, metal complexes, **electroluminescent** material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)

IT Amines, uses
RL: DEV (Device component use); USES (Uses)
(aromatic, complex, hole-transporting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)

IT Actinide compounds
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(complexes, **electroluminescent** material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)

IT Glass, uses
RL: DEV (Device component use); USES (Uses)
(conductive electrode; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)

IT **Polymers**, uses
RL: DEV (Device component use); USES (Uses)
(**conjugated**, hole-transporting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)

IT Conducting polymers
(electrode; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)

IT Coordination compounds
Organometallic compounds
Rare earth complexes
Transition metal complexes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(**electroluminescent** material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)

IT **Electroluminescent** devices
Ink-jet printing
Semiconductor device fabrication
(method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink

jet printing)
IT Polyphenyls
RL: DEV (Device component use); USES (Uses)
(polyamino, substituted or unsubstituted, hole-transporting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
IT Polyamines
RL: DEV (Device component use); USES (Uses)
(polyphenyl, substituted or unsubstituted, hole-transporting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
IT Conducting polymers
(polythiophenes, substituted and unsubstituted, hole-transporting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
IT Polyanilines
Polysilanes
RL: DEV (Device component use); USES (Uses)
(substituted and unsubstituted, hole-transporting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
IT Poly(arylenealkenylenes)
RL: DEV (Device component use); USES (Uses)
(substituted or unsubstituted, hole-transporting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
IT 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 7440-70-2, Calcium, uses 37271-44-6
RL: DEV (Device component use); USES (Uses)
(electrode; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
IT 25387-93-3, Lithium 8-quinolinolate
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(**electroluminescent** and electron-injecting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
IT 87-01-4D, ligand in organometallic complexes 120-46-7, 1,3-Diphenyl-1-3-propanedione 7429-90-5D, Aluminum, organometallic complexes 7439-88-5D, Iridium, organometallic complexes 7439-89-6D, Iron, organometallic complexes 7439-92-1D, Lead, organometallic complexes 7439-93-2D, Lithium, organometallic complexes 7439-95-4D, Magnesium, organometallic complexes 7439-96-5D, Manganese, organometallic complexes 7439-98-7D, Molybdenum, organometallic complexes 7440-02-0D, Nickel, organometallic complexes 7440-03-1D, Niobium, organometallic complexes 7440-04-2D, Osmium, organometallic complexes 7440-05-3D, Palladium, organometallic complexes 7440-06-4D, Platinum, organometallic complexes 7440-09-7D, Potassium, organometallic complexes 7440-16-6D, Rhodium, organometallic complexes 7440-17-7D, Rubidium, organometallic complexes 7440-18-8D, Ruthenium, organometallic complexes 7440-20-2D, Scandium, organometallic complexes 7440-22-4D, Silver, organometallic complexes 7440-23-5D, Sodium, organometallic complexes 7440-24-6D, Strontium, organometallic complexes 7440-25-7D, Tantalum, organometallic complexes 7440-31-5D, Tin, organometallic

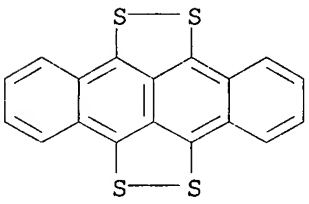
complexes 7440-32-6D, Titanium, organometallic complexes 7440-36-0D, Antimony, organometallic complexes 7440-39-3D, Barium, organometallic complexes 7440-41-7D, Beryllium, organometallic complexes 7440-42-8D, Boron, organometallic complexes 7440-43-9D, Cadmium, organometallic complexes 7440-46-2D, Cesium, organometallic complexes 7440-47-3D, Chromium, organometallic complexes 7440-48-4D, Cobalt, organometallic complexes 7440-50-8D, Copper, organometallic complexes 7440-55-3D, Gallium, organometallic complexes 7440-56-4D, Germanium, organometallic complexes 7440-57-5D, Gold, organometallic complexes 7440-62-2D, Vanadium, organometallic complexes 7440-65-5D, Yttrium, organometallic complexes 7440-66-6D, Zinc, organometallic complexes 7440-67-7D, Zirconium, organometallic complexes 7440-70-2D, Calcium, organometallic complexes 7440-74-6D, Indium, organometallic complexes 13930-88-6D, ligand in organometallic complexes 14405-36-8 14913-52-1D, Neodymium 3+, organometallic complexes, uses 15133-54-7 16910-54-6D, Europium 2+, organometallic complexes, uses 18472-30-5D, Erbium 3+, organometallic complexes, uses 18923-26-7D, Cerium 3+, organometallic complexes, uses 18923-27-8D, Ytterbium 3+, organometallic complexes, uses 22541-14-6D, Praseodymium 3+, organometallic complexes, uses 22541-16-8D, Promethium 3+, organometallic complexes, uses 22541-17-9D, Samarium 3+, organometallic complexes, uses 22541-18-0D, Europium 3+, organometallic complexes, uses 22541-19-1D, Gadolinium 3+, organometallic complexes, uses 22541-20-4D, Terbium 3+, organometallic complexes, uses 22541-21-5D, Dysprosium 3+, organometallic complexes, uses 22541-22-6D, Holmium 3+, organometallic complexes, uses 22541-23-7D, Thulium 3+, organometallic complexes, uses 22541-24-8D, Lutetium 3+, organometallic complexes, uses 22578-81-0D, Uranium 3+, organometallic complexes, uses 26201-32-1D, ligand in organometallic complexes 129050-60-8
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(**electroluminescent** material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)

IT 1217-45-4, 9,10-Dicyanoanthracene 28805-75-6, Cyanoanthracene 50851-57-5
RL: DEV (Device component use); USES (Uses)
(electron injecting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)

IT 905-62-4 2085-33-8, Alq3 15082-28-7 23467-27-8 58280-31-2 135804-06-7 138372-67-5, OXD-7 146162-54-1 148044-16-0 148896-39-3 150405-69-9, TAZ
RL: DEV (Device component use); USES (Uses)
(electron-injecting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)

IT **193-44-2** 25067-59-8, Poly(vinylcarbazole) 26009-24-5D, Poly(p-phenylenevinylene), copolymers 55330-79-5 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine 98038-22-3, Aniline-m-sulfanilic acid copolymer 121220-44-8, o-Ethylaniline-o-toluidine copolymer 123847-85-8 124729-98-2, MTDATA 126415-16-5, Aniline-o-anisidine copolymer 126415-20-1, o-Aminophenol-o-toluidine copolymer 126415-22-3, o-Phenylenediamine-o-toluidine copolymer 143686-82-2 157755-87-8 432042-07-4 432042-08-5 474974-61-3 474974-62-4
RL: DEV (Device component use); USES (Uses)
(hole-transporting material; method for forming **electroluminescent** devices comprising deposition of

electroluminescent material on substrate by ink jet printing)
IT 26009-24-5, Poly(p-phenylenevinylene)
RL: DEV (Device component use); USES (Uses)
(substituted or unsubstituted, hole-transporting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Charles, C; WO 9943031 A 1999 HCAPLUS
(2) Dainippon Toryo Co Ltd; JP 2000160083 A 2000 HCAPLUS
(3) Kathirgamanathan, P; WO 0032719 A 2000 HCAPLUS
(4) Kathirgamanathan, P; WO 0044851 A 2000 HCAPLUS
(5) Oshima, T; US 5932139 A 1999 HCAPLUS
(6) Seiko Epson Corp; EP 1083775 A 2001 HCAPLUS
(7) Vleggaar, J; WO 0141229 A 2001 HCAPLUS
IT **193-44-2**
RL: DEV (Device component use); USES (Uses)
(hole-transporting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
RN 193-44-2 HCAPLUS
CN Naphthaceno[5,6-cd:11,12-c'd']bis[1,2]dithiole (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L106 ANSWER 4 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:869274 HCAPLUS
DN 137:360164
ED Entered STN: 15 Nov 2002
TI **Electroluminescent** device
IN Kathirgamanathan, Poopathy
PA Elam-T Limited, UK
SO PCT Int. Appl., 46 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM H01L051-20
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002091493	A2	20021114	WO 2002-GB2093	20020507
	WO 2002091493	C1	20030306		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,

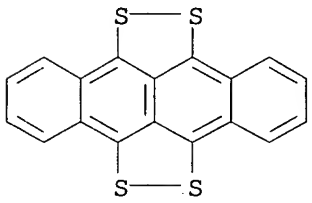
PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI GB 2001-10999 A 20010504
AB **Electroluminescent** structures are described which comprise a first electrode which is a substrate of semiconducting material (e.g., Si); a layer of an **electroluminescent** material which comprises an **electroluminescent** metal chelate; and a second electrode. The structures can be formed into an array of pixels to form a display and the switching on and off of each pixel controlled. By having pixels which emit different colors a full color display can be formed.
ST **electroluminescent** display semiconductor substrate electrode metal chelate active layer
IT **Electroluminescent** devices
(displays; **electroluminescent** devices with semiconductor electrodes and metal chelate-containing active layers)
IT Electric contacts
Electrodes
(**electroluminescent** devices with semiconductor electrodes and metal chelate-containing active layers)
IT Polyanilines
Rare earth alloys
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** devices with semiconductor electrodes and metal chelate-containing active layers)
IT **Luminescent** screens
Luminescent substances
(**electroluminescent; electroluminescent** devices with semiconductor electrodes and metal chelate-containing active layers)
IT Coordination compounds
RL: DEV (Device component use); USES (Uses)
(polynuclear; **electroluminescent** devices with semiconductor electrodes and metal chelate-containing active layers)
IT 60-00-4, EDTA, uses 67-43-6, DTPA **193-44-2** 869-52-3, TTHA 905-62-4 1217-45-4, 9,10 Dicyanoanthracene 1344-57-6D, Uranium dioxide, compds. with metals and organic compds. 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 7429-90-5, Aluminum, uses 7429-90-5D, Aluminum, compds. with metals and organic compds. 7429-91-6D, Dysprosium, compds. with metals and organic compds. 7439-88-5D, Iridium, compds. with metals and organic compds. 7439-89-6D, Iron, compds. with metals and organic compds. 7439-92-1D, Lead, compds. with metals and organic compds. 7439-93-2, Lithium, uses 7439-93-2D, Lithium, compds. with metals and organic compds. 7439-94-3D, Lutetium, compds. with metals and organic compds. 7439-95-4D, Magnesium, compds. with metals and organic compds.
7439-96-5D, Manganese, compds. with metals and organic compds. 7439-98-7D, Molybdenum, compds. with metals and organic compds. 7440-00-8D, Neodymium, compds. with metals and organic compds. 7440-02-0D, Nickel, compds. with metals and organic compds. 7440-03-1D, Niobium, compds. with metals and organic compds. 7440-04-2D, Osmium, compds. with metals and organic compds. 7440-05-3D, Palladium, compds. with metals and organic compds. 7440-06-4D, Platinum, compds. with metals and organic compds. 7440-09-7D, Potassium, compds. with metals and organic compds. 7440-10-0D, Praseodymium, compds. with metals and organic compds. 7440-12-2D, Promethium, compds. with metals and organic compds. 7440-16-6D, Rhodium, compds. with metals and organic compds. 7440-17-7D, Rubidium, compds. with metals and organic compds.

7440-18-8D, Ruthenium, compds. with metals and organic compds. 7440-19-9D, Samarium, compds. with metals and organic compds. 7440-20-2D, Scandium, compds. with metals and organic compds. 7440-21-3, Silicon, uses 7440-22-4D, Silver, compds. with metals and organic compds. 7440-23-5D, Sodium, compds. with metals and organic compds. 7440-24-6D, Strontium, compds. with metals and organic compds. 7440-25-7D, Tantalum, compds. with metals and organic compds. 7440-27-9D, Terbium, compds. with metals and organic compds. 7440-29-1D, Thorium, compds. with metals and organic compds. 7440-30-4D, Thulium, compds. with metals and organic compds. 7440-31-5D, Tin, compds. with metals and organic compds. 7440-32-6D, Titanium, compds. with metals and organic compds. 7440-36-0D, Antimony, compds. with metals and organic compds. 7440-39-3D, Barium, compds. with metals and organic compds. 7440-41-7D, Beryllium, compds. with metals and organic compds. 7440-42-8D, Boron, compds. with metals and organic compds. 7440-43-9D, Cadmium, compds. with metals and organic compds. 7440-45-1D, Cerium, compds. with metals and organic compds. 7440-46-2D, Cesium, compds. with metals and organic compds. 7440-47-3D, Chromium, compds. with metals and organic compds. 7440-48-4D, Cobalt, compds. with metals and organic compds. 7440-50-8D, Copper, compds. with metals and organic compds. 7440-52-0D, Erbium, compds. with metals and organic compds. 7440-53-1D, Europium, compds. with metals and organic compds. 7440-54-2D, Gadolinium, compds. with metals and organic compds. 7440-55-3D, Gallium, compds. with metals and organic compds. 7440-56-4D, Germanium, compds. with metals and organic compds. 7440-57-5D, Gold, compds. with metals and organic compds. 7440-60-0D, Holmium, compds. with metals and organic compds. 7440-61-1D, Uranium, compds. with metals and organic compds. 7440-62-2D, Vanadium, compds. with metals and organic compds. 7440-64-4D, Ytterbium, compds. with metals and organic compds. 7440-65-5D, Yttrium, compds. with metals and organic compds. 7440-66-6D, Zinc, compds. with metals and organic compds. 7440-67-7D, Zirconium, compds. with metals and organic compds. 7440-70-2, Calcium, uses 7440-70-2D, Calcium, compds. with metals and organic compds. 7440-74-6D, Indium, compds. with metals and organic compds. 13291-61-7, DCTA 14280-50-3D, Lead +2, compds. with metals and organic compds., uses 14913-52-1D, Neodymium +3, compds. with metals and organic compds. 15082-28-7 15158-11-9D, Copper +2, compds. with metals and organic compds., uses 15158-12-0D, Lead +4, compds. with metals and organic compds., uses 16065-88-6D, Palladium +2, compds. with metals and organic compds., uses 16065-90-0D, Cerium +4, compds. with metals and organic compds. 16065-92-2D, Thorium +4, compds. with metals and organic compds. 16637-16-4D, Uranyl ion +2, compds. with metals and organic compds. 16910-54-6D, Europium +2, compds. with metals and organic compds. 17493-86-6D, Copper +1, compds. with metals and organic compds., uses 18472-30-5D, Erbium +3, compds. with metals and organic compds. 18923-26-7D, Cerium +3, compds. with metals and organic compds. 18923-27-8D, Ytterbium +3, compds. with metals and organic compds. 22537-46-8D, Palladium +4, compds. with metals and organic compds., uses 22537-50-4D, Tin +4, compds. with metals and organic compds., uses 22541-14-6D, Praseodymium +3, compds. with metals and organic compds. 22541-16-8D, Promethium +3, compds. with metals and organic compds. 22541-17-9D, Samarium +3, compds. with metals and organic compds. 22541-18-0D, Europium +3, compds. with metals and organic compds. 22541-19-1D, Gadolinium +3, compds. with metals and organic compds. 22541-20-4D, Terbium +3, compds. with metals and organic compds. 22541-21-5D, Dysprosium +3, compds. with metals and organic compds. 22541-22-6D, Holmium +3, compds. with metals and organic compds. 22541-23-7D, Thulium +3, compds. with metals and organic compds. 22541-24-8D, Lutetium +3, compds. with metals and organic compds. 22541-31-7D, Platinum +4, compds. with metals and organic compds., uses 22541-90-8D, Tin +2, compds. with metals and organic compds., uses

22542-10-5D, Platinum +2, compds. with metals and organic compds., uses
22578-81-0D, Uranium +3, compds. with metals and organic compds. 23467-27-8
25067-59-8, Poly(vinylcarbazole) **25233-30-1, Polyaniline**
35734-21-5D, Antimony +2, compds. with metals and organic compds., uses
37271-44-6 41058-93-9D, Antimony +4, compds. with metals and organic compds., uses 50851-57-5 58280-31-2 65181-78-4 123847-85-8
124729-98-2, m-TDATA 135804-06-7 138372-67-5, OXD-7 146162-54-1
148044-16-0 148896-39-3 150405-69-9, TAZ 474974-61-3 474974-62-4
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** devices with semiconductor electrodes and metal chelate-containing active layers)

IT **193-44-2 25233-30-1, Polyaniline**
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** devices with semiconductor electrodes and metal chelate-containing active layers)

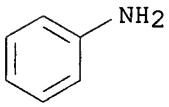
RN 193-44-2 HCAPLUS
CN Naphthaceno[5,6-cd:11,12-c'd']bis[1,2]dithiole (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L106 ANSWER 5 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:869018 HCAPLUS
DN 137:360160
ED Entered STN: 15 Nov 2002
TI **Electroluminescent** devices
IN Kathirgamanathan, Poopathy
PA Elam-T Limited, UK
SO PCT Int. Appl., 57 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C09K011-06
ICS H05B033-14; H01L051-20
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)
Section cross-reference(s): 76

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002090466	A1	20021114	WO 2002-GB2094	20020507

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI GB 2001-10995 A 20010504
GB 2001-11000 A 20010504

AB **Electroluminescent** devices comprising an anode, a layer of a metal chelate **electroluminescent** compound, and a cathode are described in which the cathode and/or the anode is silicon; preferably there is a layer of a hole-transporting material between the anode and the **electroluminescent** compound and a layer of an electron-transporting material between the **electroluminescent** compound and the cathode.

ST **electroluminescent** device silicon anode metal chelate active layer

IT Electric contacts
Electrodes
(**electroluminescent** devices with silicon electrodes and metal chelate-containing active layers)

IT Polyanilines
Rare earth alloys
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** devices with silicon electrodes and metal chelate-containing active layers)

IT **Luminescent** substances
(**electroluminescent**; **electroluminescent** devices with silicon electrodes and metal chelate-containing active layers)

IT Coordination compounds
RL: DEV (Device component use); USES (Uses)
(polynuclear; **electroluminescent** devices with silicon electrodes and metal chelate-containing active layers)

IT 60-00-4, EDTA, uses 67-43-6, DTPA **193-44-2** 869-52-3, TTHA 905-62-4 1217-45-4, 9,10 Dicyanoanthracene 1344-57-6D, Uranium dioxide, compds. with metals and organic compds. 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 7429-90-5, Aluminum, uses 7429-90-5D, Aluminum, compds. with metals and organic compds. 7429-91-6D, Dysprosium, compds. with metals and organic compds. 7439-88-5D, Iridium, compds. with metals and organic compds. 7439-89-6D, Iron, compds. with metals and organic compds. 7439-92-1D, Lead, compds. with metals and organic compds. 7439-93-2, Lithium, uses 7439-93-2D, Lithium, compds. with metals and organic compds. 7439-94-3D, Lutetium, compds. with metals and organic compds. 7439-95-4D, Magnesium, compds. with metals and organic compds.
7439-96-5D, Manganese, compds. with metals and organic compds. 7439-98-7D, Molybdenum, compds. with metals and organic compds. 7440-00-8D, Neodymium, compds. with metals and organic compds. 7440-02-0D, Nickel, compds. with metals and organic compds. 7440-03-1D, Niobium, compds. with metals and organic compds. 7440-04-2D, Osmium, compds. with metals and organic compds.

7440-05-3D, Palladium, compds. with metals and organic compds. 7440-06-4D, Platinum, compds. with metals and organic compds. 7440-09-7D, Potassium, compds. with metals and organic compds. 7440-10-0D, Praseodymium, compds. with metals and organic compds. 7440-12-2D, Promethium, compds. with metals and organic compds. 7440-16-6D, Rhodium, compds. with metals and organic compds. 7440-17-7D, Rubidium, compds. with metals and organic compds. 7440-18-8D, Ruthenium, compds. with metals and organic compds. 7440-19-9D, Samarium, compds. with metals and organic compds. 7440-20-2D, Scandium, compds. with metals and organic compds. 7440-21-3, Silicon, uses 7440-22-4D, Silver, compds. with metals and organic compds. 7440-23-5D, Sodium, compds. with metals and organic compds. 7440-24-6D, Strontium, compds. with metals and organic compds. 7440-25-7D, Tantalum, compds. with metals and organic compds. 7440-27-9D, Terbium, compds. with metals and organic compds. 7440-29-1D, Thorium, compds. with metals and organic compds. 7440-30-4D, Thulium, compds. with metals and organic compds. 7440-31-5D, Tin, compds. with metals and organic compds. 7440-32-6D, Titanium, compds. with metals and organic compds. 7440-36-0D, Antimony, compds. with metals and organic compds. 7440-39-3D, Barium, compds. with metals and organic compds. 7440-41-7D, Beryllium, compds. with metals and organic compds. 7440-42-8D, Boron, compds. with metals and organic compds. 7440-43-9D, Cadmium, compds. with metals and organic compds. 7440-45-1D, Cerium, compds. with metals and organic compds. 7440-46-2D, Cesium, compds. with metals and organic compds. 7440-47-3D, Chromium, compds. with metals and organic compds. 7440-48-4D, Cobalt, compds. with metals and organic compds. 7440-50-8D, Copper, compds. with metals and organic compds. 7440-52-0D, Erbium, compds. with metals and organic compds. 7440-53-1D, Europium, compds. with metals and organic compds. 7440-54-2D, Gadolinium, compds. with metals and organic compds. 7440-55-3D, Gallium, compds. with metals and organic compds. 7440-56-4D, Germanium, compds. with metals and organic compds. 7440-57-5D, Gold, compds. with metals and organic compds. 7440-60-0D, Holmium, compds. with metals and organic compds. 7440-61-1D, Uranium, compds. with metals and organic compds. 7440-62-2D, Vanadium, compds. with metals and organic compds. 7440-64-4D, Ytterbium, compds. with metals and organic compds. 7440-65-5D, Yttrium, compds. with metals and organic compds. 7440-66-6D, Zinc, compds. with metals and organic compds. 7440-67-7D, Zirconium, compds. with metals and organic compds. 7440-70-2, Calcium, uses 7440-70-2D, Calcium, compds. with metals and organic compds. 7440-74-6D, Indium, compds. with metals and organic compds. 13291-61-7, DCTA 14280-50-3D, Lead +2, compds. with metals and organic compds., uses 14913-52-1D, Neodymium +3, compds. with metals and organic compds. 15082-28-7 15158-11-9D, Copper +2, compds. with metals and organic compds., uses 15158-12-0D, Lead +4, compds. with metals and organic compds., uses 16065-88-6D, Palladium +2, compds. with metals and organic compds., uses 16065-90-0D, Cerium +4, compds. with metals and organic compds. 16065-92-2D, Thorium +4, compds. with metals and organic compds. 16637-16-4D, Uranyl ion +2, compds. with metals and organic compds. 16910-54-6D, Europium +2, compds. with metals and organic compds. 17493-86-6D, Copper +1, compds. with metals and organic compds., uses 18472-30-5D, Erbium +3, compds. with metals and organic compds. 18923-26-7D, Cerium +3, compds. with metals and organic compds. 18923-27-8D, Ytterbium +3, compds. with metals and organic compds. 22537-46-8D, Palladium +4, compds. with metals and organic compds., uses 22537-50-4D, Tin +4, compds. with metals and organic compds., uses 22541-14-6D, Praseodymium +3, compds. with metals and organic compds. 22541-16-8D, Promethium +3, compds. with metals and organic compds. 22541-17-9D, Samarium +3, compds. with metals and organic compds. 22541-18-0D, Europium +3, compds. with metals and organic compds. 22541-19-1D, Gadolinium +3, compds. with metals and organic compds. 22541-20-4D, Terbium +3, compds. with metals and organic compds.

22541-21-5D, Dysprosium +3, compds. with metals and organic compds.
22541-22-6D, Holmium +3, compds. with metals and organic compds.
22541-23-7D, Thulium +3, compds. with metals and organic compds.
22541-24-8D, Lutetium +3, compds. with metals and organic compds.
22541-31-7D, Platinum +4, compds. with metals and organic compds., uses
22541-90-8D, Tin +2, compds. with metals and organic compds., uses
22542-10-5D, Platinum +2, compds. with metals and organic compds., uses
22578-81-0D, Uranium +3, compds. with metals and organic compds. 23467-27-8
25067-59-8, Poly(vinylcarbazole) **25233-30-1, Polyaniline**
35734-21-5D, Antimony +2, compds. with metals and organic compds., uses
37271-44-6 41058-93-9D, Antimony +4, compds. with metals and organic compds., uses 50851-57-5 50926-11-9, ITO 58280-31-2 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine 123847-85-8 124729-98-2, m-TDATA 135804-06-7 138372-67-5, OXD-7 146162-54-1 148044-16-0 148896-39-3 150405-69-9, TAZ 156882-92-7 474974-61-3 474974-62-4
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** devices with silicon electrodes and metal chelate-containing active layers)

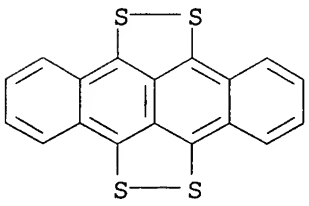
RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; PATENT ABSTRACTS OF JAPAN 1996, V1996(08)
(2) Heinrich, L; IEEE TRANSACTIONS ON ELECTRON DEVICES 1997, V44(8), P1249 HCAPLUS
(3) Ibm; WO 9720355 A 1997 HCAPLUS
(4) Kathirgamanathan, P; WO 9858037 A 1998 HCAPLUS
(5) Kathirgamanathan, P; WO 0026323 A 2000 HCAPLUS
(6) Kathirgamanathan, P; WO 0032717 A 2000 HCAPLUS
(7) Kathirgamanathan, P; WO 0032718 A 2000 HCAPLUS
(8) Kathirgamanathan, P; WO 0044851 A 2000 HCAPLUS
(9) Kiyoshi, T; JP 61071589 A 1986
(10) Parker, I; APPLIED PHYSICS LETTERS 1994, V64(14), P1774 HCAPLUS
(11) Secr Defence Brit; WO 9219084 A 1992 HCAPLUS
(12) Tdk Corp; JP 08096964 A 1996 HCAPLUS
(13) Watanabe, M; US 5625255 A 1997 HCAPLUS
(14) Zhou, X; APPLIED PHYSICS LETTERS 1999, V74(4), P609 HCAPLUS

IT **193-44-2 25233-30-1, Polyaniline**
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** devices with silicon electrodes and metal chelate-containing active layers)

RN 193-44-2 HCAPLUS
CN Naphthaceno[5,6-cd:11,12-c'd']bis[1,2]dithiole (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

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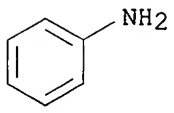

L106 ANSWER 6 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:869017 HCAPLUS
DN 137:360159
ED Entered STN: 15 Nov 2002
TI **Electroluminescent** devices
IN Kathirgamanathan, Poopathy
PA Elam-T Limited, UK
SO PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C09K011-06
ICS H05B033-14; H01L051-20
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002090465	A1	20021114	WO 2002-GB2092	20020507

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI GB 2001-10995 A 20010504
GB 2001-11000 A 20010504

AB **Electroluminescent** devices are described which comprise a first Si electrode (anode), a layer of an **electroluminescent** compound comprising a metal chelate, and a cathode; preferably there is a layer of a hole-transporting material between the anode and the **electroluminescent** compound and a layer of an electron-transporting material between the **electroluminescent** compound and the silicon electrode. The metal chelate may be a mixed metal chelate. The cathode is preferably a low work function metal selected from aluminum, calcium, lithium, silver/magnesium alloys and rare earth metal alloys.

ST **electroluminescent** device silicon anode metal chelate active layer

IT Electric contacts
Electrodes
(**electroluminescent** devices with silicon anodes and metal chelate-containing active layers)

IT Polyanilines

Rare earth alloys
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** devices with silicon anodes and metal chelate-containing active layers)

IT **Luminescent** substances
(**electroluminescent**; **electroluminescent** devices with silicon anodes and metal chelate-containing active layers)

IT Coordination compounds
RL: DEV (Device component use); USES (Uses)
(polynuclear; **electroluminescent** devices with silicon anodes and metal chelate-containing active layers)

IT 60-00-4, EDTA, uses 67-43-6, DTPA **193-44-2** 869-52-3, TTHA 905-62-4 1217-45-4, 9,10 Dicyanoanthracene 1344-57-6D, Uranium dioxide, compds. with metals and organic compds. 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 7429-90-5, Aluminum, uses 7429-90-5D, Aluminum, compds. with metals and organic compds. 7429-91-6D, Dysprosium, compds. with metals and organic compds. 7439-88-5D, Iridium, compds. with metals and organic compds. 7439-89-6D, Iron, compds. with metals and organic compds. 7439-92-1D, Lead, compds. with metals and organic compds. 7439-93-2, Lithium, uses 7439-93-2D, Lithium, compds. with metals and organic compds. 7439-94-3D, Lutetium, compds. with metals and organic compds. 7439-95-4D, Magnesium, compds. with metals and organic compds.
7439-96-5D, Manganese, compds. with metals and organic compds. 7439-98-7D, Molybdenum, compds. with metals and organic compds. 7440-00-8D, Neodymium, compds. with metals and organic compds. 7440-02-0D, Nickel, compds. with metals and organic compds. 7440-03-1D, Niobium, compds. with metals and organic compds. 7440-04-2D, Osmium, compds. with metals and organic compds. 7440-05-3D, Palladium, compds. with metals and organic compds. 7440-06-4D, Platinum, compds. with metals and organic compds. 7440-09-7D, Potassium, compds. with metals and organic compds. 7440-10-0D, Praseodymium, compds. with metals and organic compds. 7440-12-2D, Promethium, compds. with metals and organic compds. 7440-16-6D, Rhodium, compds. with metals and organic compds. 7440-17-7D, Rubidium, compds. with metals and organic compds. 7440-18-8D, Ruthenium, compds. with metals and organic compds. 7440-19-9D, Samarium, compds. with metals and organic compds. 7440-20-2D, Scandium, compds. with metals and organic compds. 7440-21-3, Silicon, uses 7440-22-4D, Silver, compds. with metals and organic compds. 7440-23-5D, Sodium, compds. with metals and organic compds. 7440-24-6D, Strontium, compds. with metals and organic compds. 7440-25-7D, Tantalum, compds. with metals and organic compds. 7440-27-9D, Terbium, compds. with metals and organic compds. 7440-29-1D, Thorium, compds. with metals and organic compds. 7440-30-4D, Thulium, compds. with metals and organic compds. 7440-31-5D, Tin, compds. with metals and organic compds. 7440-32-6D, Titanium, compds. with metals and organic compds. 7440-36-0D, Antimony, compds. with metals and organic compds. 7440-39-3D, Barium, compds. with metals and organic compds. 7440-41-7D, Beryllium, compds. with metals and organic compds. 7440-42-8D, Boron, compds. with metals and organic compds. 7440-43-9D, Cadmium, compds. with metals and organic compds. 7440-45-1D, Cerium, compds. with metals and organic compds. 7440-46-2D, Cesium, compds. with metals and organic compds. 7440-47-3D, Chromium, compds. with metals and organic compds. 7440-48-4D, Cobalt, compds. with metals and organic compds. 7440-50-8D, Copper, compds. with metals and organic compds. 7440-52-0D, Erbium, compds. with metals and organic compds. 7440-53-1D, Europium, compds. with metals and organic compds. 7440-54-2D, Gadolinium, compds. with metals and organic compds. 7440-55-3D, Gallium, compds. with metals and organic compds. 7440-56-4D, Germanium, compds. with metals and organic compds. 7440-57-5D, Gold, compds. with metals and organic compds. 7440-60-0D, Holmium, compds. with metals and organic compds. 7440-61-1D,

Uranium, compds. with metals and organic compds. 7440-62-2D, Vanadium, compds. with metals and organic compds. 7440-64-4D, Ytterbium, compds. with metals and organic compds. 7440-65-5D, Yttrium, compds. with metals and organic compds. 7440-66-6D, Zinc, compds. with metals and organic compds. 7440-67-7D, Zirconium, compds. with metals and organic compds. 7440-70-2, Calcium, uses 7440-70-2D, Calcium, compds. with metals and organic compds. 7440-74-6D, Indium, compds. with metals and organic compds. 13291-61-7, DCTA 14280-50-3D, Lead +2, compds. with metals and organic compds., uses 14913-52-1D, Neodymium +3, compds. with metals and organic compds. 15082-28-7 15158-11-9D, Copper +2, compds. with metals and organic compds., uses 15158-12-0D, Lead +4, compds. with metals and organic compds., uses 16065-88-6D, Palladium +2, compds. with metals and organic compds., uses 16065-90-0D, Cerium +4, compds. with metals and organic compds. 16065-92-2D, Thorium +4, compds. with metals and organic compds. 16637-16-4D, Uranyl ion +2, compds. with metals and organic compds. 16910-54-6D, Europium +2, compds. with metals and organic compds. 17493-86-6D, Copper +1, compds. with metals and organic compds., uses 18472-30-5D, Erbium +3, compds. with metals and organic compds. 18923-26-7D, Cerium +3, compds. with metals and organic compds. 18923-27-8D, Ytterbium +3, compds. with metals and organic compds. 22537-46-8D, Palladium +4, compds. with metals and organic compds., uses 22537-50-4D, Tin +4, compds. with metals and organic compds., uses 22541-14-6D, Praseodymium +3, compds. with metals and organic compds. 22541-16-8D, Promethium +3, compds. with metals and organic compds. 22541-17-9D, Samarium +3, compds. with metals and organic compds. 22541-18-0D, Europium +3, compds. with metals and organic compds. 22541-19-1D, Gadolinium +3, compds. with metals and organic compds. 22541-20-4D, Terbium +3, compds. with metals and organic compds. 22541-21-5D, Dysprosium +3, compds. with metals and organic compds. 22541-22-6D, Holmium +3, compds. with metals and organic compds. 22541-23-7D, Thulium +3, compds. with metals and organic compds. 22541-24-8D, Lutetium +3, compds. with metals and organic compds. 22541-31-7D, Platinum +4, compds. with metals and organic compds., uses 22541-90-8D, Tin +2, compds. with metals and organic compds., uses 22542-10-5D, Platinum +2, compds. with metals and organic compds., uses 22578-81-0D, Uranium +3, compds. with metals and organic compds. 23467-27-8 25067-59-8, Poly(vinylcarbazole) **25233-30-1, Polyaniline** 35734-21-5D, Antimony +2, compds. with metals and organic compds., uses 37271-44-6 41058-93-9D, Antimony +4, compds. with metals and organic compds., uses 50851-57-5 58280-31-2 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine 123847-85-8 124729-98-2, m-TDATA 135804-06-7 138372-67-5, OXD-7 146162-54-1 148044-16-0 148896-39-3 150405-69-9, TAZ 156882-92-7 474974-61-3 474974-62-4
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** devices with silicon anodes and metal chelate-containing active layers)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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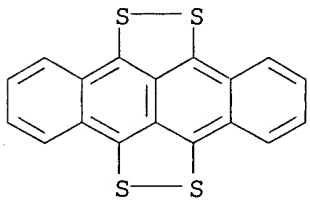
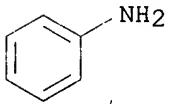
(13) Watanabe, M; US 5625255 A 1997 HCAPLUS
(14) Zhou, X; APPLIED PHYSICS LETTERS 1999, V74(4), P609 HCAPLUS
IT **193-44-2 25233-30-1, Polyaniline**
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** devices with silicon anodes and metal chelate-containing active layers)
RN 193-44-2 HCAPLUS
CN Naphthaceno[5,6-cd:11,12-c'd']bis[1,2]dithiole (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L106 ANSWER 7 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:376203 HCAPLUS
DN 135:138033
ED Entered STN: 25 May 2001
TI Synthesis and characterization of a **luminescent** binaphthyl-based polymer
AU Wu, X.; Liu, Y.; Zhu, D.
CS Center for Molecular Science, Institute of Chemistry, Chinese Academy of Science, Beijing, 100080, Peop. Rep. China
SO Synthetic Metals (2001), 121(1-3), 1699-1700
CODEN: SYMEDZ; ISSN: 0379-6779
PB Elsevier Science S.A.
DT Journal
LA English
CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 73
AB A new **luminescence conjugated polymer** containing binaphthyl moiety was synthesized by Suzuki coupling reaction. It was characterized by 1H NMR, FT-IR, element anal., GPC, DSC and TGA. The polymer possesses excellent thermal stability (Tg = 287.5°C), and

good solubility in organic solvents. A blue emission was observed from its thin
solid film under irradiation of UV light.
ST t binaphthyl polymer **luminescence**
IT **Luminescence**
UV and visible spectra
(synthesis and characterization of **luminescent** binaphthyl-based polymer)
IT 351422-03-2P 351422-04-3P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(synthesis and characterization of **luminescent** binaphthyl-based polymer)
IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, reactions 111-25-1, 1-Bromohexane 602-09-5, [1,1'-Binaphthalene]-2,2'-diol 638-45-9, 1-Iodohexane
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis and characterization of **luminescent** binaphthyl-based polymer)
IT 13185-00-7P 14753-51-6P 128424-36-2P 171089-85-3P 191787-87-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis and characterization of **luminescent** binaphthyl-based polymer)
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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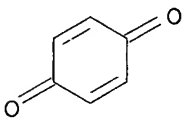
(3) Sogah, G; J Am Chem Soc 1979, V101, P3035 HCAPLUS
(4) Thomas, V; Macromol: Chem Phys 1994, V195, P1933
IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis and characterization of **luminescent** binaphthyl-based polymer)
RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



L106 ANSWER 8 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:601333 HCAPLUS
DN 133:310544
ED Entered STN: 30 Aug 2000
TI Step-ladder and ladder-type poly(para-phenylene)s - approaches towards efficient blue-**light emitting** polymers
AU Setayesh, Sepas; Marsitzky, Dirk; Scherf, Ullrich; Mullen, Klaus
CS Max-Planck-Institute for Polymer Research, Mainz, 55128, Germany
SO Comptes Rendus de l'Academie des Sciences, Serie IV: Physique, Astrophysique (2000), 1(4), 471-478
CODEN: CRACFI
PB Editions Scientifiques et Medicales Elsevier
DT Journal
LA English
CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 35, 36, 73, 76

AB Rod-coil block copolymers with poly[2,7-(9,9-dialkyl)fluorene] (2,7-PF) blocks as the rod segment and poly(ethyleneoxide) blocks as the flexible coil segment was developed to combine the photophys. properties of **conjugated polymers** with supramol. ordering of block copolymers. In order to balance the electron and hole injection in **light-emitting** devices (LEDs), poly[2,7-(9-fluorenone)] (2,7-PFO) with low and reversible reduction potential (-1.48 V) was synthesized as electron-injection/hole-blocking material. Ladder-type poly(para-phenylene) (LPPP) is one of the mostly favored materials for blue LEDs, since the polymer is fully soluble, structurally well-defined and exhibits high **photoluminescence** quantum efficiency. Spectral narrowing of the PL emission was observed at pumping pulse energies in the blue of < 5 μJ/pulse. LPPP films spun on a nanostructural DFB resonator can act as single-mode blue-green solid-state lasers, so-called plastic lasers. To bridge the gap between LPPP and 2,7-PF, novel poly[2,8-(6,6,12,12-tetraalkyl)indenofluorene]s (2,8-PIF) were synthesized, that exhibit an efficient blue **photoluminescence** and thermotropic liquid crystallinity >250°.

ST polyparaphenylene blue LED; ladder polymer blue LED; polyfluorenone blue LED; polyindenofluorene blue LED

IT Solid state lasers
(based on blue-**light emitting** ladder-type poly(para-phenylene)s)

IT **Electroluminescent** devices
(blue-emitting, polymer; step-ladder and ladder-type poly(para-phenylene)s as efficient blue-**light emitting** polymers)

IT **Polymers**, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(**conjugated**; step-ladder and ladder-type poly(para-phenylene)s as efficient blue-**light emitting** polymers)

IT Polyphenyls
Polyphenyls
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(ladder; step-ladder and ladder-type poly(para-phenylene)s as efficient blue-**light emitting** polymers)

IT **Luminescence**
UV and visible spectra
(of blue-**light emitting** step-ladder and ladder-type poly(para-phenylene)s)

IT Ladder polymers
Ladder polymers
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(polyphenyls; step-ladder and ladder-type poly(para-phenylene)s as efficient blue-**light emitting** polymers)

IT Liquid crystals
(thermotropic; of blue-**light emitting** poly(tetraalkyl indenofluorene))

IT Liquid crystals
(transitions; of blue-**light emitting** poly(tetraalkyl indenofluorene))

IT **107207-76-1P**, Poly(9-oxo-9H-fluorene-2,7-diyl)
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)

(cyclic voltammogram of polyfluorenone showing suitability as electron-injection/hole-blocking layer in multilayer LEDs)

IT 171865-00-2P
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(ladder-type poly(para-phenylene)s as efficient multicolor LEDs and as laser material)

IT 264281-60-9P 264281-63-2P 264884-64-2P 264884-65-3P
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(synthesis and blue-**light emitting** property of poly[(tetraalkyl)indenofluorene])

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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(25) Yang, Y; MRS Bulletin 1997, V22(6), P31 HCAPLUS
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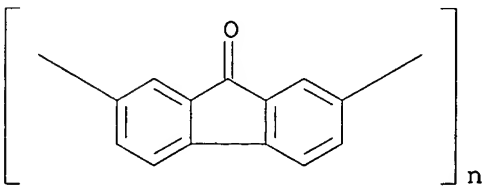
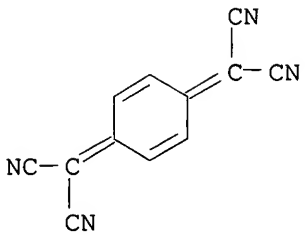
IT **107207-76-1P**, Poly(9-oxo-9H-fluorene-2,7-diyl)
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(cyclic voltammogram of polyfluorenone showing suitability as electron-injection/hole-blocking layer in multilayer LEDs)

RN 107207-76-1 HCAPLUS

CN Poly(9-oxo-9H-fluorene-2,7-diyl) (9CI) (CA INDEX NAME)



L106 ANSWER 9 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:712247 HCAPLUS
DN 132:13813
ED Entered STN: 08 Nov 1999
TI Combinatorial chemistry approach to development of molecular plastic solar cells
AU Godovsky, Dmitri; Inganas, Olle; Brabec, Christoph J.; Sariciftci, N. Serdar; Hummelen, Jan C.; Janssen, Rene A. J.; Prato, M.; Maggini, M.; Segura, Jose; Martin, Nazario
CS IFM, Linkoping University, Linkoping, S-581 83, Swed.
SO AIP Conference Proceedings (1999), 486(Electronic Properties of Novel Materials--Science and Technology of Molecular Nanostructures), 483-486 CODEN: APCPCS; ISSN: 0094-243X
PB American Institute of Physics
DT Journal
LA English
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
AB We used a combinatorial chemical approach to develop the mol. plastic solar cells based on soluble fullerene derivs. or solubilized TCNQ mols. in combination with **conjugated polymers**. Profiles, formed by the diffusion of low mol. weight component in the spin-cast polymer host were used. The ratio between low mol. weight acceptor and polymer changed along the diffusion gradient direction from 100% to 0% at the distances 10-20 mm. Optical and electrophys. properties such as absorption, **luminescence**, short circuit current and open circuit voltage were measured using a specially designed installation with the resolution of 25 points per mm.
ST mol plastic solar cell
IT Solar cells
(combinatorial chemical approach to development of mol. plastic solar cells)
IT Fullerenes
RL: DEV (Device component use); USES (Uses)
(combinatorial chemical approach to development of mol. plastic solar cells)
IT **Polymers**, uses
RL: DEV (Device component use); USES (Uses)
(**conjugated**; combinatorial chemical approach to development of mol. plastic solar cells)
IT **1518-16-7D**, Tcnq, derivs. 26009-24-5, Poly(1,4-phenylene-1,2-ethenediyl)
RL: DEV (Device component use); USES (Uses)
(combinatorial chemical approach to development of mol. plastic solar cells)
IT **1518-16-7D**, Tcnq, derivs.
RL: DEV (Device component use); USES (Uses)
(combinatorial chemical approach to development of mol. plastic solar cells)
RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



L106 ANSWER 10 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:702246 HCAPLUS
DN 132:71116
ED Entered STN: 03 Nov 1999
TI **Light emitting** devices from organic charge transfer adduct thin films
AU Kathirgamanathan, P.; Kandappu, V.; Hara, S.; Chandrakumar, K.; Marianesan, S. L.; Selvaranjan, S.; Surendrakumar, S.; Toohey, M. J.
CS Sch. Electrical, Electronic Information Engineering, Centre for Electronic Materials for Engineering, South Bank University, London, UK
SO Materials Letters (1999), 40(6), 285-293
CODEN: MLETDJ; ISSN: 0167-577X
PB Elsevier Science B.V.
DT Journal
LA English
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 76
AB Thin film devices of charge transfer adducts of tetrathiafulvalene (TTF) were fabricated. A luminance of 5 cd m-2 was achieved for a device structure ITO/poly(aniline)/ TTF(NO3)0.55/Al whose **EL** spectrum has a broad peak at 645 nm. The devices were fabricated by spin coating from solns. of the adducts. A luminous efficiency of 5 + 10-4 lm W-1 was obtained for these devices which is comparable to that of ITO/poly(aniline)/Alq3/Al (5.2 + 10-4 lm W-1) under same fabrication conditions. The single layer, mixed layer and double layer devices fabricated in this study fit the space charge limited model. Devices fabricated from [TTF-Alq3] **emit** white **light** (40 cd m-2) with a luminous efficiency of 6.6 + 10-4 lm W-1. The color of **light emitted** appears to depend on the effective oxidation state of TTF in the adducts.
ST **light emitting** device tetra thia fulvalene charge transfer adduct; **electroluminescence** tetrathiafulvalene nitrate aluminum quinolinolato; chloride tetrathiafulvalene cation radical **luminescence**
IT Space charge
(current-voltage relationship of **light emitting** devices using tetrathiafulvalene nitrate)
IT Electron transfer
(**light emitting** devices using tetrathiafulvalene charge transfer adducts)
IT Polyanilines
RL: DEV (Device component use); USES (Uses)
(**light emitting** devices using tetrathiafulvalene nitrate and poly(aniline) coated ITO electrodes)
IT **Luminescence**
Luminescence, electroluminescence

(of tetrathiafulvalene charge transfer adducts)
IT Electric current-potential relationship
(space charge limited current of **light emitting** devices using tetrathiafulvalene nitrate)
IT Optical absorption
(tetrathiafulvalene charge transfer adducts)
IT Electric current carriers
(transport; **light emitting** devices using tetrathiafulvalene nitrate)
IT **Electroluminescent** devices
(using tetrathiafulvalene nitrate and aluminum tris(quinolinolato))
IT **1518-16-7D**, fluoroderivs.
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(**electroluminescence** relative to other tetrathiafulvalene adducts)
IT **31366-25-3**, Tetrathiafulvalene
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(green **light emitting** devices)
IT **1518-16-7**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(**light emitting** devices)
IT 852-38-0, PBD 9011-14-7, PMMA
RL: DEV (Device component use); USES (Uses)
(**light emitting** devices using tetrathiafulvalene nitrate and)
IT 2085-33-8, Tris(8-quinolinolato)aluminum
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(**light emitting** devices using tetrathiafulvalene nitrate and)
IT **25233-30-1**, Poly(aniline)
RL: DEV (Device component use); USES (Uses)
(**light emitting** devices using tetrathiafulvalene nitrate and poly(aniline) coated ITO electrodes)
IT 50926-11-9, ITO
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(**polyaniline** coating in **light emitting** devices using tetrathiafulvalene nitrate)
RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD
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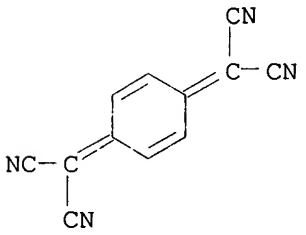
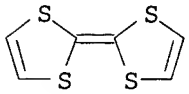
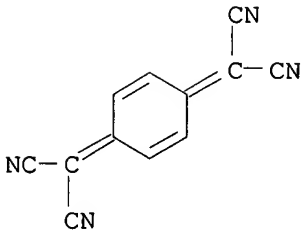
IT **1518-16-7D**, fluoroderivs.
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(**electroluminescence** relative to other tetrathiafulvalene adducts)
RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



IT **31366-25-3**, Tetrathiafulvalene
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(green **light emitting** devices)
RN 31366-25-3 HCAPLUS
CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



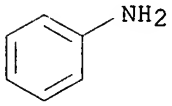
IT **1518-16-7**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(**light emitting** devices)
RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



IT **25233-30-1**, Poly(aniline)
RL: DEV (Device component use); USES (Uses)
(**light emitting** devices using tetrathiafulvalene nitrate and poly(aniline) coated ITO electrodes)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L106 ANSWER 11 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:593787 HCAPLUS
DN 131:311041
ED Entered STN: 21 Sep 1999
TI Conjugated poly-P-phenylene (PPP) from poly(1,3-cyclohexadiene) (PCHD) homo- and block copolymers: controlled processability and properties
AU Mays, J.; Hong, K.; Wang, Y.; Advincula, R. C.
CS Department of Chemistry, University of Alabama at Birmingham, Birmingham, AL, 35294-1240, USA
SO Materials Research Society Symposium Proceedings (1999), 561(Organic Nonlinear Optical Materials and Devices), 189-194
CODEN: MRSPDH; ISSN: 0272-9172
PB Materials Research Society
DT Journal
LA English
CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 73, 74
AB Conjugated poly-p-phenylene (PPP) materials were prepared from poly(1,3-cyclohexadiene) (PCHD). The precursor PCHD polymers were synthesized by living anionic polymerization to produce homo- and block copolymer configurations with polystyrene. A variety of initiators, solvent, and temperature conditions were used to determine the right parameters for obtaining narrow MWD [mol. weight distribution] polymers. The conditions for polymerization determined the ratio of 1,2 and 1,4 isomers in the microstructure. Conversion to PPP derivs. was effected by dehydrogenation reaction with chloranil. Systematic conversion to a **conjugated polymer** with

increased solubility and **photoluminescence** properties was achieved. The microstructure, MW, and block copolymer composition affect processability and energy conversion properties dramatically.

ST cyclohexadiene **polymer** precursor **conjugated** polyphenylene prepn

IT Polymerization
(anionic; control of **photoluminescence** and processability of conjugated poly(p-phenylene)s by conversion of poly(cyclohexadiene)s)

IT **Polymers**, uses
RL: CAT (Catalyst use); USES (Uses)
(**conjugated**, polyphenylenes; control of **photoluminescence** and processability of conjugated poly(p-phenylene)s by conversion of poly(cyclohexadiene)s)

IT Dehydrogenation
Luminescence
(control of **photoluminescence** and processability of conjugated poly(p-phenylene)s by conversion of poly(cyclohexadiene)s)

IT 109-72-8, n-Butyllithium, uses 865-47-4 2785-29-7, Potassium benzyl
RL: CAT (Catalyst use); USES (Uses)
(anionic initiator; control of **photoluminescence** and processability of conjugated poly(p-phenylene)s by conversion of poly(cyclohexadiene)s)

IT 24991-24-0, Poly(1,2-phenylene) 25190-62-9, Poly-p-phenylene
RL: PRP (Properties)
(control of **photoluminescence** and processability of conjugated poly(p-phenylene)s by conversion of poly(cyclohexadiene)s)

IT 592-57-4, 1,3-Cyclohexadiene
RL: RCT (Reactant); RACT (Reactant or reagent)
(control of **photoluminescence** and processability of conjugated poly(p-phenylene)s by conversion of poly(cyclohexadiene)s)

IT **118-75-2**, Chloranil, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(dehydrogenation reagent; control of **photoluminescence** and processability of conjugated poly(p-phenylene)s by conversion of poly(cyclohexadiene)s)

IT 25155-73-1, 1,3-Cyclohexadiene-styrene copolymer 27986-50-1, Poly(1,3-cyclohexadiene)
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(precursor; control of **photoluminescence** and processability of conjugated poly(p-phenylene)s by conversion of poly(cyclohexadiene)s)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD

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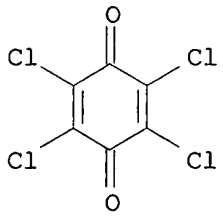
IT **118-75-2**, Chloranil, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(dehydrogenation reagent; control of **photoluminescence** and processability of conjugated poly(p-phenylene)s by conversion of poly(cyclohexadiene)s)

RN 118-75-2 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)



L106 ANSWER 12 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:446733 HCAPLUS
DN 129:136685
ED Entered STN: 20 Jul 1998
TI Structure and Properties of Cyano-Substituted Poly(2,5-dialkoxy-p-phenylene vinylene)s
AU Chen, Show-An; Chang, En-Chung
CS Chemical Engineering Department, National Tsing-Hua University, Hsinchu, 30043, Taiwan
SO Macromolecules (1998), 31(15), 4899-4907
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
CC 36-2 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 73
AB Soluble, crystallizable cyano-substituted poly(2,5-dialkoxy-p-phenylene vinylene)s (RO-CNPPV)s having the alkoxy groups hexyloxy, octyloxy, and decyloxy were prepared using the Knoevenagel condensation method and characterized by x-ray diffraction, DSC, and UV-vis and **photoluminescence** (PL) spectroscopy measurements. In the ordered phase, the polymers have a two-layer structure with side chain aligned in the all-trans conformation lying on the same plane of the coplanar main chains. However, the presence of the bulky cyano group on the vinylene segment leads to a deviation from coplanarity and poor stacking of the main chains and therefore the absence of vibronic transitions in the UV-vis and PL spectra (which usually appear in the PPV and RO-PPVs). As temperature increases, the extent of aromatic ring distortion increases gradually, causing a continuous increase in the d-spacing between two neighboring stacking subchains (dm), which increases up to 16% at the end of melting, but the side chain retains the same orientation and the d-spacing between two successive layers (ds) expands by only about 3%. This effect is opposite to that of poly(3-dodecylthiophene) having a vibronic transition, for which dm remains constant and ds increases by 22% mainly in the melting region. In the melting range, although the aromatic rings distort to a higher extent, and in the meantime the side chains become more coil-like and randomly oriented, both can recover to their original alignments after cooling down to below the melting region. In the entire thermal process, a significant thermochromism occurs with the optical absorption maximum shifting by 81 nm compared to that of poly(3-dodecylthiophene), 100 nm, while the emission maximum blue-shifts by 94 nm. As temperature rises well above Tm (by more than 40°), the aromatic rings distort to a high extent such that the side chains intermingle with each other, causing a strongly

hindered relaxational motion of the main chains after the cooling. They can recover to their original state only by redissolving and then recasting. No liquid crystalline state was observed in the RO-CNPPVs.

ST cyano polyalkoxyphenylenevinylene phase chain structure; orientation chain optical absorption cyano polyalkoxyphenylenevinylene; thermochromism cyano polyalkoxyphenylenevinylene chain relaxation

IT Polymerization
(Knoevenagel condensation; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT Polymer chains
(conformation; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT **Polymers**, properties
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**conjugated**; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT Poly(arylenealkenylenes)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(cyano-group and alkoxy-group containing; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT Polymer chains
(entanglement; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT Polymer chains
(orientation; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT Polymer chains
(packing; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT Polymer morphology
(phase; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT Crystallinity
Electron delocalization
Knoevenagel reaction
Phase transition enthalpy
Rotational barrier
Structural phase transition
Thermochromism
Thermoluminescence
(preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT Polymer chains
(side; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT Optical absorption
(thermally induced; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT Bond angle
(torsional; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT 210475-60-8P, 1,4-Bis(cyanomethyl)-2,5-bis(hexyloxy)benzene-2,5-bis(hexyloxy)terephthaldehyde copolymer, SRU
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(all-trans; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT 123440-34-6P, 2,5-Bis(octyloxy)terephthaldehyde 129080-34-8P, 2,5-Bis(decyloxy)terephthaldehyde 151903-52-5P, 2,5-

Bis(hexyloxy)terephthaldehyde 151903-53-6P, 1,4-Bis(cyanomethyl)-2,5-bis(hexyloxy)benzene 163233-69-0P, 1,4-Bis(cyanomethyl)-2,5-bis(decyloxy)benzene 177281-34-4P, 1,4-Bis(cyanomethyl)-2,5-bis(octyloxy)benzene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT 151903-54-7P, 1,4-Bis(cyanomethyl)-2,5-bis(hexyloxy)benzene-2,5-bis(hexyloxy)terephthaldehyde copolymer 210344-61-9P, 1,4-Bis(cyanomethyl)-2,5-bis(octyloxy)benzene-2,5-bis(octyloxy)terephthaldehyde copolymer 210344-62-0P, 1,4-Bis(cyanomethyl)-2,5-bis(octyloxy)benzene-2,5-bis(octyloxy)terephthaldehyde copolymer, SRU 210344-63-1P, 1,4-Bis(cyanomethyl)-2,5-bis(decyloxy)benzene-,5-bis(decyloxy)terephthaldehyde copolymer 210344-64-2P, 1,4-Bis(cyanomethyl)-2,5-bis(decyloxy)benzene-,5-bis(decyloxy)terephthaldehyde copolymer, SRU
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT **84-58-2**, 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT 67399-93-3P, 1,4-Bis(hexyloxy)benzene 153282-57-6P, 1,4-Bis(bromomethyl)-2,5-bis (hexyloxy)benzene 158982-83-3P, 1,4-Bis(hydroxymethyl)-2,5-bis(hexyloxy)benzene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

RE.CNT 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD

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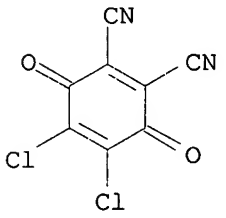
IT **84-58-2**, 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

RN 84-58-2 HCAPLUS

CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI, 9CI) (CA INDEX NAME)



L106 ANSWER 13 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:108269 HCAPLUS
DN 126:192380
ED Entered STN: 15 Feb 1997
TI Organic **light emitting** diodes with blended structures using polymer dispersed dyes
AU Lee, J. G.; Jung, Y. Y.; Choi, D. K.; Park, B.; Woo, H. S.; Kim, Y.; Ha, C. S.; Kim, Y. S.; Kim, Y. R.
CS Electronic Materials Lab., Inst. for Advanced Eng., Yong-In, 449-800, S. Korea
SO Ungyong Mulli (1996), 9(6), 795-800
CODEN: HMHMEY; ISSN: 1013-7009
PB Korean Physical Society
DT Journal
LA Korean
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 41, 76
AB LEDs were fabricated by dye-dispersed polymer blends. The emissive dyes

were composed of 1,1,4,4-tetraphenyl-1,3-butadiene (TB) and 2-(4-biphenylyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole (butyl-PBD), which dispersed into polyimide mixed with **polyaniline** (PANI) of **emeraldine** salt type doped with camphorsulfonic acid (CSA). The tetrathiafulvalene (TTF) was introduced into the LEDs as electron transport material. The device with the emissive blends dispersed in PANI has strong blue-violet **electroluminescence** (**EL**) peaked near 2.72 eV at room temperature and a relatively high **EL** efficiency compared to that of the LED without PANI. The optical and the elec. properties of devices including the **EL** efficiency and the I-V characteristics with and without PANI, are discussed.

ST diode **light emitting** polymer dispersed dye; LED blended polymer dispersed dye

IT Electric current-potential relationship
Electric properties
Luminescence, electroluminescence
Optical properties
(of polymer dispersed dyes)

IT Polyimides, uses
RL: DEV (Device component use); USES (Uses)
(organic LEDs with blended structures using dyes dispersed in camphorsulfonic acid-doped **polyaniline** of **emeraldine** salt type mixed with)

IT Polyamines
RL: DEV (Device component use); USES (Uses)
(organic LEDs with blended structures using dyes dispersed in polyimide mixed with camphorsulfonic acid-doped)

IT Dyes
(organic LEDs with blended structures using polymer dispersed)

IT **Electroluminescent** devices
(with blended structures using polymer dispersed dyes)

IT 1450-63-1, 1,1,4,4-Tetraphenyl-1,3-butadiene 15082-28-7
RL: MOA (Modifier or additive use); USES (Uses)
(of polymer dispersed dyes)

IT **25233-30-1D, Polyaniline, emeraldine** salt type
RL: DEV (Device component use); USES (Uses)
(organic LEDs with blended structures using dyes dispersed in polyimide mixed with camphorsulfonic acid-doped)

IT **31366-25-3**, Tetrathiafulvalene
RL: DEV (Device component use); USES (Uses)
(organic LEDs with blended structures using dyes dispersed in polyimide mixed with camphorsulfonic acid-doped **polyaniline** (PANI) of **emeraldine** salt containing)

IT 3144-16-9, Camphorsulfonic acid
RL: MOA (Modifier or additive use); USES (Uses)
(organic LEDs with blended structures using dyes dispersed in polyimide mixed with **polyaniline** of **emeraldine** salt type doped with)

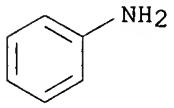
IT **25233-30-1D, Polyaniline, emeraldine** salt type
RL: DEV (Device component use); USES (Uses)
(organic LEDs with blended structures using dyes dispersed in polyimide mixed with camphorsulfonic acid-doped)

RN 25233-30-1 HCAPLUS

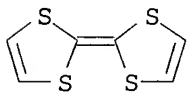
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



IT **31366-25-3**, Tetrathiafulvalene
RL: DEV (Device component use); USES (Uses)
(organic LEDs with blended structures using dyes dispersed in polyimide mixed with camphorsulfonic acid-doped **polyaniline** (PANI) of **emeraldine** salt containing)
RN 31366-25-3 HCAPLUS
CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



L106 ANSWER 14 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:48131 HCAPLUS
DN 126:90011
ED Entered STN: 22 Jan 1997
TI Photoinduced electron transfer between **conjugated polymers** and a homologous series of TCNQ derivatives
AU Heeger, Alan J.; Wudl, Fred; Sariciftci, N. Serdar; Janssen, Rene A. J.; Martin, Nazario
CS Institute Polymers and Organic Solids, University California, Santa Barbara, CA, 93106, USA
SO Journal de Physique I (1996), 6(12), 2151-2158
CODEN: JPGCE8; ISSN: 1155-4304
PB Editions de Physique
DT Journal
LA English
CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 37, 74
AB The results of photoinduced absorption (PIA) and **photoluminescence** studies of the photoinduced electron transfer reactions from **conjugated polymer** donors onto a series of acceptors based on TCNQ and benzoquinone derivs. containing fused aromatic rings are summarized. Poly[2-methoxy-5-(2-ethylhexyloxy)-p-phenylenevinylene] and poly[3-(2-(3-methylbutoxy)ethyl)thiophene] were used in the study. The results are compared to the well-defined photoinduced electron transfer demonstrated from **conjugated polymer** donors onto buckminsterfullerene, C60. For the TCNQ derivs., the efficiency of the electron transfer process correlates with the reduction potential of the acceptors. However, photoinduced electron transfer was not observed in the case of the benzoquinone derivs., although their electrochem. reduction potentials are similar to C60.
ST photoinduced electron transfer **conjugated polymer** TCNQ; **luminescence conjugated polymer** TCNQ deriv; polythiophene TCNQ deriv photoinduced electron transfer; polyarylenealkenylene TCNQ deriv photoinduced electron transfer
IT IR spectra
(near-IR; photoinduced electron transfer between **conjugated**

polymers and a homologous series of TCNQ derivs.)
IT Electron acceptors
Electron donors
Luminescence
Photoinduced electron transfer
Reduction potential
(photoinduced electron transfer between **conjugated** **polymers** and a homologous series of TCNQ derivs.)
IT Poly(arylenealkenylenes)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(photoinduced electron transfer between **conjugated** **polymers** and a homologous series of TCNQ derivs.)
IT Polymers, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(polythiophenes; photoinduced electron transfer between **conjugated polymers** and a homologous series of TCNQ derivs.)
IT **1518-16-7** 70359-39-6, 11,11,12,12-Tetracyano-9,10-anthraquinodimethane 120086-24-0 120086-26-2 120086-27-3 138184-36-8 185739-92-8 185739-94-0
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(photoinduced electron transfer between **conjugated** **polymers** and a homologous series of TCNQ derivs.)
RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(3) Bouman, M; Polym Prep 1994, V35, P309 HCAPLUS
(4) Cha, M; Appl Phys Lett, in press 1995
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(6) Janssen, R; J Chem Phys 1994, V101, P9519 HCAPLUS
(7) Janssen, R; J Chem Phys 1995, V103, P788 HCAPLUS
(8) Janssen, R; J Chem Phys 1995, V103, P8840 HCAPLUS
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(11) Marcus, R; J Chem Phys 1956, V24, P966 HCAPLUS
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(14) Sariciftci, N; US 5331183 1994 HCAPLUS
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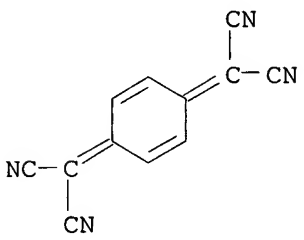
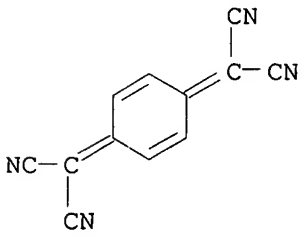
(17) Sariciftci, N; Int J Mod Phys 1994, VB8, P237
(18) Sariciftci, N; Science 1992, V258, P1474 HCAPLUS
(19) Smilowitz, L; Phys Rev 1993, VB47, P13835
(20) Wei, X; Phys Rev B, in press 1996
(21) Wudl, F; Materials for Nonlinear Optics:Chemical Perspectives 1991, V455, P683 HCAPLUS
(22) Yu, G; Appl Phys Lett 1994, V64, P3422 HCAPLUS
(23) Yu, G; Science 1995, V270, P1789 HCAPLUS
IT **1518-16-7**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(photoinduced electron transfer between **conjugated** **polymers** and a homologous series of TCNQ derivs.)
RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA

INDEX NAME)



L106 ANSWER 15 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:954244 HCAPLUS
DN 124:41143
ED Entered STN: 30 Nov 1995
TI Photoinduced electron transfer reactions in mixed films of π-**conjugated polymers** and a homologous series of tetracyano-p-quinodimethane derivatives
AU Janssen, Rene A. J.; Christiaans, Marwijn P. T.; Hare, Casey; Martin, Nazario; Sariciftci, N. Serdar; Heeger, Alan J.; Wudl, Fred
CS Inst. Polymers Org. Solids, Univ. California, Santa Barbara, CA, 93106-5090, USA
SO Journal of Chemical Physics (1995), 103(20), 8840-5
CODEN: JCPSA6; ISSN: 0021-9606
PB American Institute of Physics
DT Journal
LA English
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB Near-steady-state photoinduced absorption (PIA) and **photoluminescence** studies are presented on photoinduced electron transfer reactions from poly[2-methoxy-5-(2'-ethylhexyloxy)-1,4-phenylene vinylene] (MEH-PPV) and poly[3-(2-(3-methylbutoxy)ethyl)thiophene] (P3MBET) as donors (D) onto a homologous series of tetracyano-p-quinodimethane (TCNQ) derivs. containing fused aromatic rings as acceptors (A) to systematically study the effect of acceptor electron affinity. We observe that composite films of these D/A couples give rise to long-lived charge separated states upon photoexcitation, as evidenced from the formation of polaron bands (radical cation absorption) in the PIA and the concomitant loss of the metastable triplet PIA and **photoluminescence** that are observed in pristine MEH-PPV and P3MBET. We find that the efficiency of the photoinduced electron transfer reaction correlates with the reduction potential of the acceptors.
ST photochem electron transfer polymer tetracyanoquinodimethane deriv
IT **Luminescence**
Optical absorption
Photolysis
Polaron
(photoinduced electron transfer in mixed films of π-**conjugated polymers** and tetracyano-p-quinodimethane derivs.)
IT Radical ions
(cations, photoinduced electron transfer in mixed films of π-**conjugated polymers** and tetracyano-p-quinodimethane derivs.)

IT Electron exchange and Charge transfer
(photochem., photoinduced electron transfer in mixed films of π-**conjugated polymers** and tetracyano-p-quinodimethane derivs.)
IT Electric potential
(reduction, photoinduced electron transfer in mixed films of π-**conjugated polymers** and tetracyano-p-quinodimethane derivs.)
IT **1518-16-7** 70359-39-6, 11,11,12,12-Tetracyano-9,10-anthraquinodimethane 120086-24-0 120086-25-1 120086-26-2 120086-27-3
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(electron acceptor; photoinduced electron transfer in mixed films of π- **conjugated polymers** and tetracyano-p-quinodimethane derivs.)
IT 138184-36-8, Poly[2-methoxy-5-(2'-ethylhexyloxy)-1,4-phenylene vinylene] 171980-03-3
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(electron donor; photoinduced electron transfer in mixed films of π-**conjugated polymers** and tetracyano-p-quinodimethane derivs.)
IT 99685-96-8, C60 Fullerene
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(reference compound; photoinduced electron transfer in mixed films of π-**conjugated polymers** and tetracyano-p-quinodimethane derivs.)
IT **1518-16-7**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(electron acceptor; photoinduced electron transfer in mixed films of π- **conjugated polymers** and tetracyano-p-quinodimethane derivs.)
RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



L106 ANSWER 16 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:650652 HCAPLUS
DN 121:250652
ED Entered STN: 26 Nov 1994
TI Multiple fluorescence labeling of immunoassay reagents with europium chelators
IN Diamandis, Eleftherios P.; Morton, Robert C.
PA Nordion International Inc., Can.

SO Can., 60 pp.
CODEN: CAXXA4
DT Patent
LA English
IC ICM C12N011-02
ICS G01N033-533
CC 9-10 (Biochemical Methods)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CA 1330061	A1	19940607	CA 1989-599628	19890515
PRAI	CA 1989-599628		19890515		

OS MARPAT 121:250652
AB A conjugate, for use in a labeling system, comprises avidin or streptavidin linked to a (submicron-size) carrier particle, e.g. of latex, having >15 amino groups on its surface which are individually capable of being labeled with an operable label, the carrier particle being capable of being linked to avidin or streptavidin to form the conjugate. The particle may a protein mol. or be coated with protein mols. having the amino groups on their surface. The protein may be thyroglobulin, bovine serum albumin, hemocyanin, myosin, apoferritin, catalase, a lysine copolymer, α2-macroglobulin, leucine aminopeptidase, heavy meromyosin, or histone. Preferred labels are fluorescent lanthanide chelates, especially those containing 4,7-diphenyl-1,10-phenanthroline-2,9-dicarboxylic acid derivs. Eu3+ in optimal concentration induces formation of a streptavidin-based macromol. complex which amplifies the assay signal. Thus, in a FIA for α-fetoprotein (AFP), a sample solution was incubated in a microtiter well coated with antibody to AFP. After washing, the well was incubated with a biotinylated 2nd antibody, washed, and incubated with a streptavidin conjugate of thyroglobulin labeled with 4,7-bis(chlorosulfophenyl)-1,10-phenanthroline-2,9-dicarboxylic acid Eu complex. The sensitivity of this assay was 0.01 ng/mL.
ST fluorescence immunoassay streptavidin protein lanthanide; europium chelate FIA
IT Particles
(aminated, avidin or streptavidin conjugates; multiple fluorescence labeling of immunoassay reagents with europium chelators)
IT Isotope indicators
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(particle-bound; multiple labeling of immunoassay reagents with avidin- or streptavidin-conjugated)
IT Ferritins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(apo-, conjugates, with avidin or streptavidin; multiple fluorescence labeling of immunoassay reagents with europium chelators)
IT Indicators
(**chemiluminescent**, particle-bound; multiple labeling of immunoassay reagents with avidin- or streptavidin-conjugated)
IT Rare earth metals, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(complexes, conjugates, with avidin or streptavidin, particle-bound; multiple fluorescence labeling of immunoassay reagents)
IT Ligands
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(conjugated, with biotin; multiple fluorescence labeling of immunoassay reagents with europium chelators)
IT Albumins, uses
Hemocyanins
Histones

Myosins
Proteins, specific or class
Thyroglobulins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(conjugates, with avidin or streptavidin; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT Antigens
Haptens
Intrinsic factors
Receptors
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(conjugates, with biotin; multiple fluorescence labeling of assay reagents with europium chelators)

IT Antibodies
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(conjugates, with biotin; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT Avidins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(conjugates, with proteins; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT Immunoassay
(enzyme, multiple labeling of immunoassay reagents with avidin- or streptavidin-conjugated)

IT Immunoassay
(fluorescence, multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT Indicators
(fluorescent, particle-bound; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT Spectrochemical analysis
(fluorometric, multiple fluorescence labeling of assay reagents with europium chelators)

IT Proteins, specific or class
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(folate-binding, conjugates, with biotin; multiple fluorescence labeling of assay reagents with europium chelators)

IT Meromyosins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(heavy, conjugates, with avidin or streptavidin; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT Antibodies
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(monoclonal, conjugates, with biotin; multiple fluorescence labeling of assay reagents with europium chelators)

IT Amines, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(poly-, particle-bound, avidin or streptavidin conjugates; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT Immunoassay
(radioimmunoassay, multiple labeling of immunoassay reagents with avidin- or streptavidin-conjugated)

IT Proteins, specific or class
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(steroid-binding, conjugates with biotin; multiple fluorescence labeling of assay reagents with europium chelators)

IT Proteins, specific or class
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(thyroxine-binding, conjugates with biotin; multiple fluorescence

labeling of assay reagents with europium chelators)

IT Fetoproteins
RL: ANT (Analyte); ANST (Analytical study)
(α-, multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT Macroglobulins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(α2-, conjugates, with avidin or streptavidin; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT 9002-61-3, Chorionic gonadotropin 9002-62-4, Prolactin, analysis 9002-71-5, TSH
RL: ANT (Analyte); ANST (Analytical study)
(multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT 56-87-1D, L-Lysine, **polymers**, **conjugates** with avidin or streptavidin 58-85-5D, Biotin, conjugates 9001-05-2D, Catalase, conjugates with avidin or streptavidin 9001-61-0D, Leucine aminopeptidase, conjugates with avidin or streptavidin 9013-20-1D, Streptavidin, protein conjugates
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT 81-88-9D, Rhodamine, conjugates with avidin or streptavidin 521-31-3D, Luminol, conjugates with avidin or streptavidin 605-65-2D, Dansyl chloride, conjugates with avidin or streptavidin 2321-07-5D, Fluorescein, conjugates with avidin or streptavidin 22559-71-3D, Acridinium, esters, conjugates with avidin or streptavidin 38183-12-9D, Fluorescamine, conjugates with avidin or streptavidin
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(particle-bound; multiple fluorescence labeling of immunoassay reagents)

IT 7429-91-6D, Dysprosium, chelates 7440-19-9D, Samarium, chelates 7440-27-9D, Terbium, chelates 7440-53-1D, Europium, chelates 7440-54-2D, Gadolinium, chelates 102331-59-9D, derivs., lanthanide chelates 112076-76-3D, lanthanide chelates
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(particle-bound; multiple fluorescence labeling of immunoassay reagents with europium chelators)

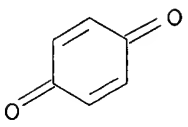
IT 9001-78-9D, Alkaline phosphatase, conjugates with avidin or streptavidin 9003-99-0D, Peroxidase, conjugates with avidin or streptavidin 9031-11-2D, β-Galactosidase, conjugates with avidin or streptavidin 14158-31-7D, Iodine-125, conjugates with avidin or streptavidin, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(particle-bound; multiple labeling of immunoassay reagents)

IT 76931-93-6D, SATA, conjugates
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with activated streptavidin; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT **106-51-4**, p-Benzoquinone, reactions 68181-17-9, SPDP 103708-09-4, Sulfo-SMCC
RL: RCT (Reactant); RACT (Reactant or reagent)
(streptavidin activation with; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT **106-51-4**, p-Benzoquinone, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(streptavidin activation with; multiple fluorescence labeling of immunoassay reagents with europium chelators)

RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



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